

Knowledge and Attitudes of Gastroenterologists towards Eating Disorders

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Abstract

Objective: To examine the knowledge and attitudes of gastroenterologists towards individuals with eating disorders.

Design, Setting & Participants: An electronic questionnaire was sent to all members of the British Society of Gastroenterology. Respondents completed questions examining knowledge of the diagnostic criteria, physical complications, legal framework and prevalence rates of eating disorders. Attitude items covered beliefs about aetiology and treatment, confidence levels in diagnosis and management and clinicians' experience of managing patients with eating disorders in medical settings.

Results: Gastroenterologists' knowledge of eating disorders was variable although attitudes were more balanced compared to other doctor groups. 29.1% of gastroenterologists felt that individuals with anorexia nervosa should not be treated on a medical unit. 56.4% of gastroenterologists described low confidence levels in diagnosing eating disorders whilst only 36.4% felt confident in their ability to manage these conditions. 54.5% of respondents described poor access to liaison psychiatry and specialist eating disorder services. Only 38.9% were aware of the use of a formal clinical guideline for the management of eating disorders in their hospital.

Discussion: There is a clear need for greater education and training of gastroenterologists regarding the diagnosis and management of eating disorders, including awareness of and engagement with national guidelines. Implementing training programmes and making information readily available could contribute to addressing some of these issues. Likewise access to liaison psychiatry and specialist eating disorder services within gastroenterology settings appears to be poor and further service provision and commissioning initiatives are required to address these issues.

Keywords: Anorexia Nervosa; Bulimia Nervosa; Eating Disorders; Gastroenterologists; Attitudes

1. INTRODUCTION

'Mental health literacy' is defined as 'knowledge and beliefs about mental disorders which aid their recognition, management or prevention'¹. Health professionals are usually thought to have a higher level of mental health literacy than the general population, although there appears to be a continuum from lay beliefs to professional knowledge rather than a dichotomy². It is well recognized that the general population has highly stigmatizing attitudes towards individuals with eating disorders, often blaming them for their

problems^{3,4}. Studies have shown that general psychiatrists, general practitioners and hospital physicians have poor knowledge of eating disorders whilst non-psychiatrists have overly pessimistic views about their outcomes⁵⁻⁹. Furthermore, hospital specialists, general practitioners and medical students consistently rank anorexia nervosa (AN) as an illness with low prestige when compared with other diagnoses¹⁰. This is a major concern given that eating disorders have the highest mortality rate of any psychiatric condition with a standardised mortality ratio of 6¹¹. Little is known, however,

about the knowledge and attitudes of gastroenterologists towards individuals with eating disorders. This is a concern given that gastroenterologists often play a crucial role in the management of these patients when they require urgent inpatient medical treatment. Furthermore, a gastroenterologist is identified as a key member of a MARSIPAN (Management of Really Sick Patients with Anorexia Nervosa) expert working group which outlines standards of treatment for MARSIPAN patients¹².

With this in mind the aim of this study was to first, assess gastroenterologists' knowledge and attitudes towards individuals with eating disorders and second, assess gastroenterologists' experiences of interface working with mental health services and the use of MARSIPAN guidelines¹².

2. METHODS

2.1. Design and Participants

The study was approved by the Leeds and York Partnership NHS Foundation Trust R&D Department. Gastroenterologists were contacted on three separate occasions via the British Society of Gastroenterology online newsletter which included a web-link to an online questionnaire.

2.2. Measures and Procedures

The online questionnaire (see appendix 1) was designed by the authors and was adapted from previous measures in this field^{5,6,9}. The questionnaire was piloted by two consultant gastroenterologists and two consultant eating disorder psychiatrists.

2.2.1. Knowledge questions

These included four extended matching items and three true/false items. Questions were based on the academic literature^{13,14} and DSM-IV diagnostic criteria¹⁵ and addressed both AN and bulimia nervosa (BN). In keeping with previous work in this field^{5,6} a negative marking scheme was utilized to allow for questions having multiple correct answers, where scores were reduced by random answers or guesswork.

2.2.2. Attitude items

There were 17 attitude items and gastroenterologists were asked to indicate their agreement by using a five-point Likert scale. Many of the attitude items were derived from previous work on stigma^{3,8} and eating disorder mental health literacy^{6,9}. Additional attitude

items explored experiences of mental health support for individuals with eating disorders whilst receiving treatment in inpatient medical settings as well as clinicians' awareness and experience of MARSIPAN guidelines¹².

2.2.3. Data analysis

Data were anonymised and collected using the web-based survey tool SurveyMonkey (<http://www.surveymonkey.com>) and analysed using SPSS V20.0 (Chicago, Illinois, USA). Sample characteristics were compared using Fisher's exact tests for categorical variables and independent sample t-tests for continuous variables as these were all approximately normally distributed. All significance tests were performed using a two-tailed five percent significance level.

3. RESULTS

3.1. Respondents

In total the questionnaire was sent to 3118 gastroenterologists and 77 responded giving a response rate of 2.5%. Of the respondents, 57.1% were men and 42.9% were women. Ethnic background was predominantly 'White British' (74.0%) with 9.1% of respondents describing themselves as 'Indian'. 46.8% had worked in gastroenterology for more than 10 years.

3.2. Levels of Knowledge among Gastroenterologists

The maximum score possible for knowledge questions was 21 and individual scores were normally distributed ranging from 3 to 19 (mean=11.8, SD=3.1).

There were no statistically significant differences in knowledge scores in relation to age, gender, ethnicity or clinician seniority.

3.2.1. Diagnostic criteria

'Fear of fatness' was the most commonly identified diagnostic criterion for AN (82.8%). 43.1% identified the correct diagnostic body mass index (BMI) threshold for AN as being below 17.5 kg/m² but 34.5% believed the BMI threshold to be even lower (16.0 kg/m²). Finally, 3 months of amenorrhoea was recognized as a diagnostic criterion for AN by only 29.3% of gastroenterologists.

'Extreme weight-control behaviours' and 'recurrent episodes of binge eating at least twice a week for 3 months' were the most commonly identified diagnostic criteria for BN being

identified by 71.2% and 61.0% of gastroenterologists respectively. 'Over-evaluation of shape and weight' was recognized by only 40.7% of gastroenterologists and only 10.2% identified the correct diagnostic BMI threshold for BN as being 17.5 kg/m² or above.

3.2.2. Physical complications and general knowledge

The majority of respondents correctly identified electrolyte abnormalities (91.5%), bradycardia (89.8%), hypoglycaemia (81.4%), osteoporosis (93.2%) and anaemia (79.7%) as common physical complications of AN. However, fewer knew about the possibility of proximal myopathy (64.4%) and oedema (57.6%). Likewise, the majority identified electrolyte abnormalities (88.1%), dental erosion (96.6%) and parotid swelling (61.0%) as common physical complications of BN, however, only 49.2% knew about the possibility of oligomenorrhoea.

Most gastroenterologists (78.0%) correctly stated that the MHA can be used to enforce nasogastric feeding in individuals with AN whilst roughly half (54.2%) correctly stated that BN has a higher prevalence rate than AN.

3.3. Attitudes among Gastroenterologists

3.3.1. Confidence levels and training

Of the respondents, less than half (43.6%) were confident in their ability to diagnose eating disorders whilst only 36.4% were confident in their ability to manage these conditions in their current practice. Moreover 61.8% of respondents were unsatisfied with the level of eating disorder training they had received during their medical training.

3.3.2. Attitudes towards eating disorders

32.7% saw AN as being 'culturally determined by woman's role in society', whereas 56.4% saw AN as 'representing a form of neurotic mental disorder'. 18.2% of respondents viewed AN as representing 'abnormal behaviour in the context of a weak, manipulative or inadequate personality' whilst 10.9% saw AN as being 'essentially untreatable'. 41.8% believed that AN was 'a neurophysiological disorder of unknown origin'.

34.5% saw BN as being 'culturally determined by woman's role in society', whereas 50.9% saw BN as 'representing a form of neurotic mental disorder'. 25.5% of respondents viewed

BN as representing 'abnormal behaviour in the context of a weak, manipulative or inadequate personality' whilst 5.5% saw BN as being 'essentially untreatable'. 41.8% believed that BN was 'a neurophysiological disorder of unknown origin'.

There were no statistically significant differences in attitude towards individuals with AN or BN in relation to age, gender, ethnicity or seniority.

3.3.3. Use of the mental health act in anorexia nervosa

80.0% felt it 'appropriate that the MHA enables compulsory re-feeding of patients with AN' whereas 83.6% believed that 'the MHA should be used to enforce admission to hospital for patients with AN'. Only 9.1% supported the statement that 'the MHA should not be used when patients clearly believe that the advantages of AN outweigh the disadvantages' and 54.5% believed that 'the MHA should be used more frequently'.

There were no statistically significant differences in attitude towards the use of the Mental Health Act in individual with AN in relation to age, ethnicity, gender or clinician seniority.

3.3.4. Interface working and MARSIPAN

45.5% of gastroenterologists surveyed stated that 'access to liaison psychiatry services and support was readily available' whilst 41.8% felt that 'access to specialist eating disorders services and support was readily available'. 78.2% felt that 'there was often a delay in transferring patients with eating disorders from a medical unit to a specialist eating disorder unit' whilst 45.5% felt that 'the needs of patients with eating disorders were not being met in their clinical practice'. 29.1% felt that 'patients with severe AN should not be treated on a medical unit'.

38.9% were aware of the use of a formal clinical guideline for the management of patients with eating disorders in their hospital whilst 24.7% stated that their team met regularly with a MARSIPAN group. Of those that met with a MARSIPAN group, 76.9% felt that the group had 'a positive impact on patient care', 76.9% said that it had 'improved communication between medical and eating disorder services' and 53.8% felt that the group had 'enhanced knowledge of eating disorders amongst medical staff'.

4. DISCUSSION

To our knowledge this is the first study to examine the knowledge and attitudes of gastroenterologists towards individuals with eating disorders. Individuals with eating disorders, particularly those with AN, sometimes require admission to a gastroenterology unit during the course of their illness. These admissions are often prolonged and can involve lengthy periods of nasogastric feeding often under duress and under the legal framework of the MHA. Likewise gastrointestinal symptoms are common in eating disorders and patients often present for treatment of chronic symptoms¹⁶⁻¹⁸ which can often prove challenging in an outpatient setting and such patients often carry profound psychosocial morbidity in excess of those presenting to eating disorder services¹⁹. Hence it is crucial that gastroenterologists should receive adequate training in both the diagnosis and management of these conditions and that information on eating disorders should be made readily available when patients with eating disorders present in medical settings.

4.1.1. Mental health literacy of gastroenterologists

Our results suggest that gastroenterologists' knowledge of eating disorders is variable with specific gaps in knowledge relating to diagnosis and the use of the MHA and higher knowledge scores in relation to physical complications compared to other doctors^{5,6}. Certain diagnostic criteria for both AN and BN were recognised by a minority of gastroenterologists and some physical complications were not recognised. This is a concern as recognition of clinical signs and symptoms is crucial in making an accurate diagnosis, assessing physical risk and determining the most appropriate treatment plan. These findings could be explained by the fact that the diagnosis and management of eating disorders is not included in the Royal College of Physicians training curriculum for gastroenterology although nutrition does have its' own sub-speciality curriculum which covers this area.

Attitudes towards AN and BN were largely similar with most gastroenterologists believing that both conditions represent a form of 'neurotic mental disorder' and are 'culturally determined by woman's role in society'. Whilst most disagreed with statements relating to eating disorders being 'essentially untreatable' and 'representing abnormal behaviour in the context of a weak, manipulative or inadequate

personality' our results mirrored previous findings in this field, i.e. non-psychiatrists and hospital doctors have more pejorative attitudes regarding the aetiology and treatability of eating disorders when compared to psychiatrists⁵⁻¹⁰. Moreover, our finding that gastroenterologists generally support a role for compulsory measures under the provisions of the MHA in the treatment of patients with AN reflects previous work in this field^{5,20}.

4.1.2. Confidence levels and training

Confidence levels amongst gastroenterologists were also variable, most feeling more confident in diagnosing eating disorders than managing these conditions. Indeed only 36.4% were confident in their ability to manage eating disorders in their current practice and the majority were dissatisfied with the level of training in eating disorders they had received which could be explained again by gaps in gastroenterology training. Interestingly confidence levels of managing eating disorders were much higher than confidence levels of psychiatrists (14.9%)⁵ which could reflect psychiatrists lack of knowledge in relation to physical risk assessment. Our finding that gastroenterologists were generally dissatisfied with the level of training in eating disorders they had received during their medical training could also be a contributing factor and mirrors previous work in this field^{5,21,22}. Moreover, the paucity and uneven distribution of dedicated eating disorder services in the UK^{23,24} means that it is likely that the majority of patients with eating disorders are managed by health professionals who do not have special expertise in treating these conditions. This is reflected in the views of service users who refer to a lack of professionals experienced in eating disorders in the UK²⁵ and who consistently value receiving treatment from professionals who are specialists in this field²⁶⁻²⁸.

4.1.3. Interface working and MARSIPAN

More than half of the respondents felt that access to mental health services was not readily available with access to liaison psychiatry services (45.5%) and specialist eating disorders services (41.8%) being similarly poor. Our results also suggest that most gastroenterologists do not feel that gastroenterology services are best placed to meet the needs of individuals with eating disorders and that there are often significant delays in transferring patients to specialist services. Indeed the MARSIPAN report¹² highlighted these issues as being major contributing factors to a number of avoidable

hospital deaths which have been highly publicised in the general media over recent years^{29,30}.

Our results also suggest that most gastroenterologists are not aware of clinical guidelines for eating disorders which could potentially reflect a lack of local policy or a lack of knowledge in this area.

5. LIMITATIONS

Although this study is the first of its kind to examine knowledge and attitudes of gastroenterologists towards eating disorders and their experiences of MARSIPAN¹², our findings must be considered in the context of several limitations. First, our response rate of 2.5% is low but given that responses for email and web-based surveys often fail to match those of others survey methods³¹ and the fact that we collected a relatively large number of responses compared with previous work in this field, it is possible that these findings are indeed representative of gastroenterologists as a whole. Nevertheless, as our sample was sourced via a web-based newsletter from only one specific gastroenterology interest group, there is a possibility of sampling bias and our results may not be generalizable to all gastroenterologists working within the UK. Second, the self-report data collection procedures used in this study may have limited the validity and reliability of our findings. Third, as there is no agreed gold standard of 'adequacy of mental health literacy' against which questionnaires such as the one used in the study can be validated, the validity and reliability of our findings may be limited. These limitations could be addressed in future studies.

6. CLINICAL IMPLICATIONS

This study clearly highlights the need to improve knowledge levels of gastroenterologists to ensure that their clinical actions are appropriately informed and carried out in line with national guidelines. Likewise it is important for gastroenterologists treating patients with eating disorders to receive adequate training in both the diagnosis and management of these conditions and information on eating disorders should be made readily available to gastroenterologists when patients with eating disorders present in medical settings. Rosenvinge et al³² described an educational programme which raised health professionals' competence in treating eating disorders and the implementation of such programmes could contribute to addressing

some of these issues, improving treatment outcomes and increasing service users' satisfaction with treatment. Action is required to improve access to Liaison Psychiatry and Eating Disorder service support in gastroenterology settings and further dissemination of the MARSIPAN¹² report is required within gastroenterology and other medical settings so that these guidelines can be incorporated into local hospital protocol.

REFERENCES

- [1] Jorm AF, Korten AE, Jacomb PA, Christensen H, Rodgers B, & Pollitt P. 'Mental Health Literacy': A survey of the public's ability to recognise mental health disorders and their beliefs about the effectiveness of treatment. *Medical Journal of Australia* 1997; 166:182-186.
- [2] Jorm AF. Mental Health Literacy. Public knowledge and beliefs about mental disorders. *The British Journal of Psychiatry* 2000; 177:396-401.
- [3] Crisp AH, Gelder MG, Rix S, Meltzer HI, & Rowlands OJ. Stigmatisation of people with mental illnesses. *The British Journal of Psychiatry* 2000; 177:4-7.
- [4] Stewart MC, Keel PK, & Schiavo RS. Stigmatization of anorexia nervosa. *International Journal of Eating Disorders* 2006; 39:320-325.
- [5] Jones WR, Saeidi S, & Morgan JF. Knowledge and Attitudes of Psychiatrists Towards Eating Disorders. *European Eating Disorders Review: the journal of the Eating Disorders Association* 2013; 21(1):84-88.
- [6] Currin L, Waller G, & Schmidt U. Primary care physicians' knowledge of and attitudes towards the eating disorders: Do they affect clinical actions? *International Journal of Eating Disorders* 2009; 42:453-458.
- [7] Hay PJ, de Angelis C, Millar H, Mond JM. Bulimia nervosa health literacy of general practitioners. *Primary Care and Community Psychiatry* 2005; 10:103-108.
- [8] Fleming J, & Szmukler GI. Attitudes of medical professionals towards patients with eating disorders. *The Australian and New Zealand Journal of Psychiatry* 1992; 26: 436-443.
- [9] Morgan JF. Eating disorders and gynaecology: Knowledge and attitudes among clinicians. *Acta Obstetrica et Gynecologica Scandinavica* 1999; 78:233-239.
- [10] Album D, Westin S. Do diseases have a prestige hierarchy? A survey among physicians and medical students. *Social Science & Medicine* 2000; 66:182-188.

- [11] Arcelus J, Mitchell AJ, Wales J, Nielsen, S. Mortality rates in patients with anorexia nervosa and other eating disorders: A meta-analysis of 36 studies. *Arch Gen Psychiatry* 2011; 68:724.
- [12] Royal College of Psychiatrists. MARSIPAN: Management of Really Sick Patients with Anorexia Nervosa. *Council Report CR189*. London: Royal College of Psychiatrists 2014.
- [13] Hebebrand J, Casper R, Treasure J, Schweiger U. The need to revise the diagnostic criteria for Anorexia Nervosa. *Journal of Neural Transmission* 2004; 111:827-840
- [14] Jones WR, Schelhase M, Morgan JF. Eating disorders; Clinical features and the role of the generalist. *Advances in Psychiatric Treatment* 2012; 18:34-43.
- [15] American Psychiatric Association. *Diagnostic and statistical manual of mental disorders (4th ed.)*. Washington, DC 2000.
- [16] Sato Y, Fukudo S. Gastrointestinal symptoms and disorders in patients with eating disorders. *Clinical Journal of Gastroenterology* 2015; 8(5):225-263.
- [17] Boyd C, Abraham S, Kellow J. Psychological features are important predictors of functional gastrointestinal disorders in patients with eating disorders. *Scandinavian Journal of Gastroenterology* 2005; 40(8):929-35.
- [18] Forney KJ, Buchman-Schmitt JM, Keel PK, Frank GKW. The medical complications associated with purging. *International Journal of Eating Disorders* 2016; 49(3):249-259.
- [19] Emmanuel AV, Stern J, Treasure J, Forbes A, Kamm MA. Anorexia nervosa in gastrointestinal practice. *European Journal of Gastroenterology & Hepatology* 2004; 16(11):1135-1142.
- [20] Tan, JOA, Doll H, Fitzpatrick R, Stewart A, & Hope T. Psychiatrist's attitudes towards autonomy, best interests and compulsory treatment in anorexia: A questionnaire survey. *Child and Adolescent Psychiatry and Mental health* 2008; 2:40.
- [21] Williams M, Lechner P. More Training Needed in Eating Disorders: A Time Cohort Comparison Study of Canadian Psychiatry Residents 2006;14(4):323-334.
- [22] Gutman, L. The ability of medical physicians to diagnose the presence of anorexia and bulimia nervosa. *Dissertation Abstracts International: Section B: The Sciences and Engineering* 2003; 63(8-B):0419-4217.
- [23] Royal College of Psychiatrists: Report to the College Section of General Psychiatry by the Eating Disorders Working Group. London. Royal College of Psychiatrists 1992.
- [24] Royal College of Psychiatrists: Eating disorders in the UK: Policies for service development and training. *Council Report CR87*. London: Royal College of Psychiatrists 2000.
- [25] Escobar-Koch T, Banker JD, Crow S, Cullis J, Ringwood S, Smith G, et al. Service users' views of eating disorder services: An international comparison. *International Journal of Eating Disorders* 2010; 43:549–559.
- [26] De La Rie S, Noordenbos G, Donker M, & Van Furth E. Evaluating the treatment of eating disorders from the patient's perspective. *International Journal of Eating Disorders* 2006; 39:667–676.
- [27] Newton T, Robinson P, & Hartley P. Treatment for eating disorders in the United Kingdom. Part II. Experiences of treatment: A survey of members of the Eating Disorders Association. *Eating Disorders Review* 1993; 1:10–21.
- [28] Rosenvinge JH, & Klusmeier AK. Treatment for eating disorders from a patient satisfaction perspective: A Norwegian replication of a British study. *European Eating Disorders review* 2000; 8:293-300.
- [29] Campbell D. Eating disorder patients' lives at risk due to long waits for NHS treatment. *The Guardian* June 2015.
- [30] Harvey, D. Eating disorders: My son died – if he'd been a girl, he may have got help sooner. *BBC Newsbeat* May 2016.
- [31] Cook C, Heath F, & Thompson RL. A meta-analysis of response rates in web or internet based surveys. *Educational and Psychological Measurement* 2000; 60:821-826.
- [32] Rosenvinge JH, Skarøderud F, & Thune-Larsen K. Can educational programmes raise clinical competence in treating eating disorders? Results from a Norwegian trial. *European Eating Disorders Review* 2003; 11:329-343.

APPENDIX 1: Questionnaire examining knowledge and attitudes of gastroenterologists towards individuals with eating disorders

CONSENT:

1. I confirm that I have read and understood the participant information for this survey. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
 - Yes
 - No

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.
 - Yes
 - No
3. I am satisfied that the information I give will be confidential.
 - Yes
 - No
4. I agree to take part in the above survey.
 - Yes
 - No

DEMOGRAPHIC INFORMATION

5. Gender
 - Male
 - Female
6. Age
 - 21-30
 - 31-40
 - 41-50
 - 51-60
 - 61 or over
7. Ethnicity
 - White British
 - Irish
 - Other White background
 - Mixed White and Black Caribbean
 - White and Black African
 - White and Asian
 - Other Mixed background
 - Asian British
 - Indian
 - Kashmiri
 - Pakistani
 - Bangladeshi
 - Other Asian Background
 - Black British
 - Caribbean
 - African
 - Other Black background
 - Chinese
 - Other (please specify)

8. Speciality
- Physician
 - Surgeon
 - Radiologist
 - Pathologist
 - Nurse
 - Dietician
 - Other (please specify)
9. How many years have you been working in your current specialty?
- 0 - 3
 - 4 - 6
 - 7 - 10
 - 11 or more

KNOWLEDGE

Please select at least one answer for each of the following questions.

10. Which of the following are included in the ICD-10 diagnostic criteria for anorexia nervosa?
- weight is maintained at least 15% below that expected (i.e. body mass index (BMI) is below 17.5 kg/m²)
 - weight is maintained at least 20% below that expected (i.e. body mass index (BMI) is below 16.0 kg/m²)
 - intense fear of gaining weight or becoming fat
 - absence of at least 3 consecutive menstrual cycles
 - absence of at least 6 consecutive menstrual cycles
11. Which of the following are included in the ICD-10 diagnostic criteria for bulimia nervosa?
- weight is maintained above a body mass index (BMI) of 17.5 kg/m²
 - over-evaluation of shape and weight
 - recurrent episodes of binge eating at least twice a week for 3 months
 - recurrent episodes of binge eating at least four times a week for 3 months
 - extreme weight-control behaviour (e.g. strict dieting, self-induced vomiting, exercising or laxative abuse)
12. Which of the following are physical complications commonly seen in patients with anorexia nervosa?
- electrolyte abnormalities
 - auto-immune disorders
 - bradycardia
 - hypoglycaemia
 - psoriasis
 - proximal myopathy
 - migraine

- osteoporosis
 - hypertension
 - anaemia
 - hypocholesterolaemia
 - oedema
13. Which of the following are physical complications commonly seen in patients with bulimia nervosa?
- electrolyte abnormalities
 - Guillain-Barre syndrome
 - oligomenorrhoea
 - tinnitus
 - dental erosion
 - vertigo
 - proximal myopathy
 - migraine
 - parotid swelling
 - psoriasis
14. Nasogastric feeding can be given to patients with eating disorders under the legal provisions of the Mental Health Act 1983?
- True
 - False
15. Eating disorders have a higher mortality rate than any other psychiatric disorder?
- True
 - False
16. Prevalence rates of anorexia nervosa are higher than those seen for bulimia nervosa?
- True
 - False

ATTITUDES

17. Please indicate how much you agree with the following statements:

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree
Anorexia nervosa is culturally determined by a person's role in society	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anorexia nervosa represents a form of neurotic mental disorder	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anorexia nervosa represents abnormal behaviour in the context of a weak, manipulative or inadequate personality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anorexia nervosa is a neurophysiological disorder of unknown origin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anorexia nervosa is essentially untreatable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. Please indicate how much you agree with the following statements:

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree
Bulimia nervosa is culturally determined by a person's role in society	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bulimia nervosa represents a form of neurotic mental disorder	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bulimia nervosa represents abnormal behaviour in the context of a weak, manipulative or inadequate personality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bulimia nervosa is a neurophysiological disorder of unknown origin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bulimia nervosa is essentially untreatable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. Please indicate how much you agree with the following statements in relation to the use of the Mental Health Act in Anorexia Nervosa:

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree
The Mental Health Act should not be used when patients clearly believe that the advantages of anorexia nervosa for them outweigh the disadvantages.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is appropriate that the Mental Health Act enables compulsory refeeding of patients with anorexia nervosa.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Mental Health Act should not be used to enforce admission to hospital for patients with anorexia nervosa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Mental Health Act should be used more frequently to protect the health and safety of patients with anorexia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20. Please indicate how much you agree with the following statements:

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree
I am confident in diagnosing eating disorders in my current practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident in managing eating disorders in my current practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am satisfied with the level of training in eating disorders I have received during my training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. Please indicate how much you agree with the following statements in relation to management of patients with eating disorders in your current practice:

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree
Access to liaison psychiatry services and support is readily available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to eating disorders services and support is readily available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is often a delay in transferring patients with eating disorders from a medical unit to a specialist eating disorder unit (SEDU)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The needs of patients with eating disorders in my current practice are not being met	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patients with severe anorexia nervosa should not be treated on a medical unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. Admitting an adult patient with an eating disorder to a medical unit for further assessment and stabilisation of physical risk would be justified in the following clinical scenarios:

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree
BMI 11, normal biochemistry, ECG normal, no clinical symptoms or signs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
BMI 16, rapid weight loss, biochemistry normal, ECG normal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
BMI 18, potassium 2.6 mmol/l, ECG normal, no clinical symptoms or signs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
BMI 14, heart rate 38 bpm, biochemistry normal, BP 80/40 mmHg, no other clinical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
BMI 13, normal biochemistry, ECG normal, no clinical symptoms or signs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
BMI 16, sodium 120 mmol/l, ECG normal, no clinical symptoms or signs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
BMI 14, recent history of blackouts and proximal myopathy, ECG normal, biochemistry normal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. In what setting do you primarily work? (optional)

- Teaching Hospital
- District General Hospital
- Other

24. What is the name of the hospital where you are primarily based? (optional)

25. Does your hospital have a formal clinical guideline for the management of patients with eating disorders in a medical setting? (optional)

- Yes
- No
- Don't know

26. Does your team meet regularly with a local MARSIPAN (Management of Really Sick Patients with Anorexia Nervosa) expert working group?

- Yes
- No
- Don't know

27. Only answer this question if you answered 'yes' to question 26.

How often does your local MARSIPAN expert working group meet?

- Every 0-3 months
- Every 4-6 months
- Every 7-12 months
- No set pattern
- Don't know

28. Only answer this question if you answered 'yes' to question 26.

If your team works closely with a local MARSIPAN expert working group have you found this group helpful in relation to:

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree
Patient care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communication between medical and eating disorder services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Development of policies and procedures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clarifying roles of Commissioners	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

29. Please feel free to add any comments you might have in relation to the assessment and management of patients with eating disorders in your current practice.

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