Eating disorders in the context of preconception care: fertility specialists' knowledge, attitudes, and clinical practices

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Objective(s): To gauge fertility specialists' knowledge, clinical practices, and training needs in regard to eating disorders.
Design: Cross-sectional study.
Settings: Fertility clinics.
Participants: Eighty Australian and New Zealand fertility specialists who were members of the Fertility Society of Australia.
Intervention(s): None.
Main Outcome Measures(s): Responses to an anonymously completed online questionnaire.
Result(s): Approximately 54% of doctors correctly identified the body mass index relevant to anorexia nervosa, and 30% identified menstrual disturbances for anorexia, while 63.8% of doctors incorrectly nominated maladaptive weight control behaviors as a characteristic of binge eating disorder. While clinicians (83.7%) agreed it was important to screen for eating disorders during preconception assessments, 35% routinely screened for eating disorders and 8.8% indicated that their clinics had clinical practice guidelines for management of eating disorders. A minority of participants (13.8%) felt satisfied with their level of university training in eating disorders, 37.5% of doctors felt confident in their ability to recognize symptoms of an eating disorder, and 96.2% indicated a need for further education and clinical guidelines. On most items examined, knowledge and clinical practices regarding eating disorders did not differ according to doctor gender or years of clinical experience working as a fertility specialist.
Conclusion(s): Knowledge about eating disorders in the context of fertility treatment is important. This study highlights the uncertainty among fertility specialists in detecting features of eating disorders. The findings point to the importance of further education and training, including the development of clinical guidelines specific to fertility health care providers. (Fertil Steril® 2017;107: 494–501. ©2016 by American Society for Reproductive Medicine.)
Key Words: Eating disorders, preconception, diagnostic criteria, fertility specialist, training

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The impact of modifiable lifestyle factors such as age, smoking, drinking, caffeine, and weight status on reproductive outcomes is widely known (1, 2). Under the rubric of preconception care, however, remains the little investigated topic of eating disorders within a fertility population (3–5). Eating disorders are serious mental illnesses related to weight and shape concerns, problematic eating behaviors, and maladaptive weight control behaviors that occur in women of childbearing years (6, 7). Estimates from large population–based surveys give a lifetime prevalence of any eating disorder among adult women of approximately 6% (8, 9). Similarly, 5%–7.5% of women experience some form of eating disorder during pregnancy (10, 11). Existing research findings on the occurrence of eating disorders in women undergoing fertility treatment vary according to inpatient or community-based assessment but the occurrence has been reported to be as high as 21%, particularly when patients present with forms of ovulatory disorders (3, 4, 12–14).

The current Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5) (15), outlines three primary categories of eating disorders: anorexia nervosa (AN), bulimia nervosa (BN), and binge eating disorder (BED). Women with eating disorders have a high incidence of psychiatric comorbidity impacting overall patient

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mental health and quality of life (16, 17). Both AN and BN have varied and complex physical and neuroendocrine implications and can result in pervasive multibody organ changes involving the cardiovascular, gastrointestinal, hematological, dermatological, and skeletal systems including major dysfunctions of the endocrine system and metabolic processes relevant to fertility (18). Specifically, healthy female reproductive function is directly related to a woman's optimal body weight range and energy availability, with eating disorders influencing the activity of the hypothalamic-pituitary-ovarian axis (19, 20). Women with AN or BN are further at higher risk of adverse maternal-fetal outcomes including inadequate gestational weight gain in pregnancy, increased rates of miscarriage and cesarean section, and the delivery of newborns who are small for gestational age (7, 21). Moreover, use of ovulation induction in women who are reproductively suppressed secondary to an eating disorder increases the risk of multiple pregnancies, with added pregnancy and neonatal complications (12). Postnatally, difficulties with breast feeding, lower infant growth, unsettled infant temperament, concerns with toddler nutrition, and maternal mood disorders have also been reported in women who had an eating disorder during pregnancy (22). Consequently, from a fertility specialist perspective, knowledge and recognition of eating disorders are important to infertility patient reproductive outcomes including the physical health of the prospective child.

Despite the spectrum of physical and psychological effects of eating disorders, research suggests that eating disorders often go undetected by professionals working in the health system. Barriers to the detection of eating disorders are multifactorial but appear to centralize around four main issues: first, a commonly held societal view that it is normal for women to have discontent about their body weight and shape such that weight control behaviors are deemed normative (23); second, an inclination for patients with an eating disorder to either nondisclose, minimize symptoms, or engage in concealment of their disorder from their treating doctor (24, 25); third, a tendency for some health professionals to maintain negative attitudes and reactions towards patients with an eating disorder due to a perception that eating disorders are self-inflicted, relate to negative personality attributes, and are therefore of lesser clinical importance (26–29); and fourth, a lack of knowledge among health practitioners of the physical and psychological indications of an eating disorder due to limited tertiary training (30–34). Collectively these factors can result in poorer mental health literacy about eating disorders among health professionals, serving to reduce both diagnostic confidence and the likelihood of referral to relevant mental health networks for appropriate psychological interventions (35, 36).

Research on eating disorders in the reproductive medicine field has focused on investigating the perspectives of clinicians who primarily are generalists or who have an obstetric focus rather than a preconception specialization (32, 37, 38). Therefore the aims of this study were first to examine fertility specialists' knowledge about eating disorders, second to determine preconception clinical practices and attitudes towards the assessment and management of eating disorders, and third to gauge fertility specialists' training needs.

MATERIALS AND METHODS

Participants

This study sought participation from male and female Australian and New Zealand medical fertility specialists who were members of the Fertility Society of Australia (FSA). Respondents were English speaking and were from all states of Australia and both the north and south islands of New Zealand.

Questionnaire Composition

The questionnaire "Fertility Specialists' Knowledge and Attitudes towards Eating Disorders" is an adapted version of a questionnaire developed by Jones et al. (34), who investigated knowledge and attitudes towards eating disorders in a cohort of psychiatrists. The Jones et al. (34) questionnaire content was determined from multiple sources including diagnostic criteria for AN and BN from the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) (39) and diagnostically equivalent criteria and body mass index (BMI) weight thresholds from the International Classification Diseases Manual, 10th revision (ICD-10) (40). As BED was not assessed by Jones et al. (34), for consistency of diagnostic classifications, adjunct DSM-IV (39) research criteria for BED were incorporated into our questionnaire. The decision to use the DSM-IV criteria rather than update the questionnaire with the contemporary criteria from DSM-5 (15) was to reduce the potential confound of participant unfamiliarity with the comparatively new changes to DSM-5 eating disorder diagnostic criteria at the time of initial data collection. These DSM-5 changes include the deletion of the criteria for amenorrhea and the absence of specificity of weight thresholds, criteria both known to be of importance within the context of fertility.

Our study questionnaire focused on five main domains: [1] demographic questions; [2] doctor knowledge of diagnostic criteria relating to AN, BN, and BED; [3] preconception clinical practices for assessing patient BMI and eating disorders; [4] attitudes towards clinical practices associated with eating disorders including management and referral processes; and [5] fertility specialist training needs. Response methods used included check boxes, yes/no response, and 5-point Likert-type items ranging in scale from 1 = strongly disagree to 5 = strongly agree.

Procedure

One hundred fifty fertility specialists who were registered as medical members of the FSA were sent an initial e-mail by a collaborating fertility specialist outlining the objectives of the study, details for consent, and a direct URL to access the study questionnaire for voluntary participation. The online questionnaire took approximately 10 minutes to complete, and no identifying participant details were collected. Two further e-mail reminders about the study were sent to

participants, with online data being collected between the months of February 2014 to August 2014. Approval for completion of this study, including participant consent and study questionnaire, was granted by the Human Research Ethics Committee of the University of Western Australia (reference no. RA/4/1/6552).

Statistical Methods

Frequency tabulation and percentages were calculated for sociodemographic items, knowledge of diagnostic criteria, and preconception clinical practices regarding BMI and eating disorders. Independent-sample *t* tests were performed to evaluate fertility specialist knowledge (i.e., total correct score on diagnostic criteria) according to gender and years of clinical experience working as a fertility specialist. Years of clinical experience data were analyzed according to a binary category of either junior (i.e., less than 10 years of clinical practice; n = 35) or senior (exceeding 10 years of clinical practice; n = 45). Likert-type items gauging attitudes to clinical practices and doctor training needs on eating disorders are reported as percentage of respondents who agreed or strongly agreed to the item, with gender differences analyzed using χ^2. Due to preliminary analyses showing multiple cells having less than expected cell counts, for the purpose of statistical reporting, we collapsed the 5-point Likert scale to a 3-point scale (i.e., strongly disagree/disagree; neither agree/disagree [neutral]; agree/strongly agree). The statistical package SPSS for Windows, version 23, was used for all statistical analyses. The significance level of .05 was used to test for statistical differences.

RESULTS

Participants

One hundred six fertility specialists initially consented to participate in this study, 54 female doctors and 52 male doctors. Twenty-six respondents discontinued after partially completing two sections of the questionnaire, leaving a valid sample of 80 respondents. A dropout analysis between responders and nonresponders showed a statistically significant effect for gender [χ^2 (1) = 9.304; P=.002], with more female fertility specialists exiting the online study questionnaire. Incomplete records were eliminated from further data analyses. Of questionnaire completers, 58% were male and 42% female, broadly representative of the gender distribution of actively practicing obstetric and gynecologist consultants at the time of study completion (41). A total of 81% of participants were from Australia and 19% were from New Zealand. Table 1 presents additional characteristics of participants who completed the research protocol.

Knowledge of Diagnostic Criteria (AN, BN, BED)

A total of 12 correct and five incorrect diagnostic criteria were presented for evaluation. Participant accuracy scores ranged from 1 to 12. Male fertility specialists attained a mean correct score of 7.20 (SD = 2.34), and female fertility specialists a mean correct score of 8.03 (SD = 2.63) with no difference found according to gender (P=.140) or years in clinical practice (P=.982).

TABLE 1

Demographic characteristics of respondents (total n = 80).

Participant characteristic	%
Age range (y)[a]	
25–35	6.2
36–45	32.5
46–55	32.5
56–65	21.2
≥66	7.5
Additional advanced fertility specialist training	
CREI certificate[b]	41.2
Masters in reproductive medicine	33.8
Other/no additional training	25.0
Years practicing as a fertility specialist[a]	
0–5	23.8
6–10	20.0
11–15	25.0
16–20	5.0
21–25	7.5
≥26	18.8
Clinical interests areas[c]	
PCOS	58.8
Male factor	37.5
Fertility preservation	36.2
Endometriosis	38.8
Pelvic surgery	26.2
Menopause	21.2

[a] Sum of percentages does not always equal 100 due to rounding.
[b] The Certificate of Reproductive Endocrinology and Infertility (CREI) qualification is held by trained gynecologists who already hold the qualification of Fellow of the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (FRANZCOG) and who have completed advanced training in the comprehensive management of patients with reproductive endocrine disorders and infertility.
[c] Participants could indicate one or more clinical interests.

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Table 2 shows the percentage of fertility specialists endorsing diagnostic criteria for each eating disorder category. Approximately 54% of participants correctly identified the BMI threshold required for a diagnosis of AN (i.e., BMI below 17.5 kg/m^2), whereas 38.8% of participants incorrectly endorsed a more extreme level of weight loss for AN (i.e., a BMI below 16.0 kg/m^2). Of participants, 16.2% correctly identified that women with BN typically maintained their weight status above weight thresholds diagnostically associated with AN. Knowledge of menstrual disturbances associated with eating disorders revealed that 30% of participants correctly endorsed the DSM-IV criteria of an absence of three consecutive menstrual cycles for AN, while 27.5% inaccurately endorsed a more stringent criterion of absence of six consecutive menstrual cycles. With respect to maladaptive weight control behaviors, while 82.5% of participants correctly recognized "extreme maladaptive weight control behaviors" as a feature for BN, 63.8% of participants incorrectly endorsed these as relevant for a diagnosis of BED. Recognition of "marked distress" as a characteristic of BED was identified by 50% of respondents.

Preconception Clinical Practices and Attitudes to Practice

Figure 1 shows preconception practices in regards to eating disorders. Analysis revealed more female fertility specialists (82.4%) compared with male fertility specialists (58.7%)

TABLE 2

Fertility specialists' knowledge of diagnostic criteria for eating disorder categories (n = 80).

Eating disorder and diagnostic criteria	%
Anorexia nervosa	
Persistent energy intake restriction leading to weight that is maintained at least 15% below the expected BMI (or BMI is below 17.5 kg/m^2)	53.8
Persistent energy intake restriction leading to weight that is maintained at least 20% below the expected BMI (or BMI is below 16.0 kg/m^2)[a]	38.8
Binge eating (eating large amounts of food when not hungry or until uncomfortably full)[a]	17.5
Persistent behavior that interferes with weight gain, even though at a significantly low weight	75.0
Absence of at least three consecutive menstrual cycles	30.0
Absence of at least six consecutive menstrual cycles[a]	27.5
Disturbance in self-perceived weight and shape	85.0
Intense fear of gaining weight or becoming fat	76.2
Bulimia nervosa	
Recurrent episodes of binge eating at least twice a week for 3 mo	72.5
A sense of lack of control over eating during a binge episode	66.2
Persistent energy intake restriction leading to weight that is maintained at least 15% below the expected BMI (BMI is below 17.5 kg/m^2)[a]	22.5
Extreme weight control behaviors (e.g., strict dieting, self-induced vomiting, exercising, or laxative use) at least twice a week for 3 mo	82.5
Overevaluation of weight and shape	60.0
Weight is maintained above a BMI of 17.5 kg/m^2	16.2
Binge eating disorder	
A sense of lack of control over eating during a binge episode	87.5
Extreme weight-control behaviors (e.g., strict dieting, self-induced vomiting, exercising, or laxative use) at least once a week[a]	63.8
Marked distress regarding binge eating is present	50.0

Note: Diagnostic criteria for AN and BN are derived from DSM-IV and ICD-10 equivalent classification frameworks. Items for BED are based on DSM-IV research criteria. Values represent percentage (%) of respondents who endorsed the item as a diagnostic criterion.

[a] Indicates participant endorsed an item that is not a correct diagnostic criteria for that specific eating disorder category.

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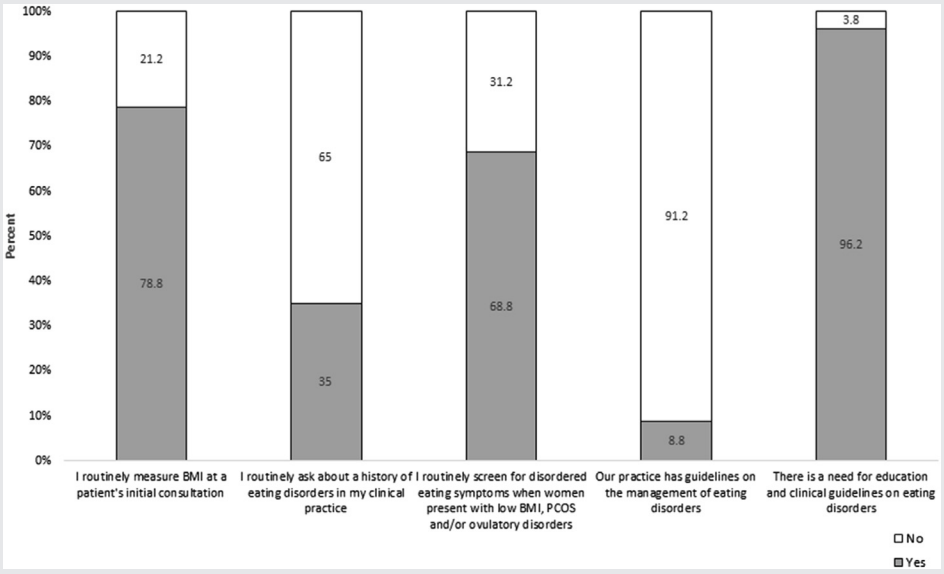
screened for the possibility of an eating disorder when a woman presented with particular symptoms of low BMI, polycystic ovary syndrome (PCOS), and/or ovulatory disorders [χ^2 (1) = 5.093; P=.024], but this practice did not differ according to years of clinical experience (P=.649). Other clinical practices or access to clinical guidelines did not differ according to gender or years of clinical experience (all P>.05).

Analyses on questionnaire items gauging doctors' attitudes to clinical practices showed that 83.7% of fertility doctors agreed or strongly agreed that it was important to screen for current eating disorders during preconception assessment, with 90% of doctors agreeing or strongly agreeing that is was important to routinely enquire about exercise behaviors (Table 3). In actual practice, however, 35% of doctors routinely assessed patients for eating disorders during preconception assessment (Fig. 1). The majority of doctors (87.4%) agreed or strongly agreed that women with either very low or very high BMI should be referred to a dietitian, with 90% of participants indicating that women with eating disorders should treat their eating disorders before commencing fertility treatment. On the issue of treatment, while the majority of doctors agreed that women with an eating disorder should treat their eating disorder before starting fertility treatment (senior doctor, 91.1%, compared with junior doctor, 88.6%), 11.4% of doctors with junior clinical experience endorsed a neutral attitude (P=.016), although this attitude did not vary according to participant gender (P=.151). A minority of doctors (13.8%) agreed that assessing for eating disorders was not their role, with 8.8% of participants agreeing that information on eating disorders was not of prime importance. On the issue of time constraints, approximately 39% of participants either agreed or strongly agreed that there was time available to assess for an eating disorder during an initial consultation, although a similar percentage of doctors held the opposing view. Overall there were no gender differences among fertility specialists in their attitudes to clinical practices relating to eating disorders (all P>.05); however, more female fertility specialists agreed or strongly agreed that patients presenting with BMI parameters outside of the healthy BMI weight range should be referred to a dietitian [χ^2 (2) = 8.447; P=.015]. This variable did not vary according to doctors' years of clinical experience (P=.062).

Confidence Levels and Training Needs

Of respondents, 37.5% agreed or strongly agreed that they were confident in their ability to identify symptoms of eating disorders, and 32.5% were confident in their knowledge of referral pathways for patients with eating disorders. A minority of doctors (13.8%) were satisfied with the level of tertiary training received in this area, and 96.2% of participants felt there was a need for further education or clinical recommendations about treatment guidelines after patient disclosure of an eating disorder (Fig. 1). Male and female doctors did not differ in their attitudes to questions about their confidence in assessment, referral pathways, or training needs (all P>.05). Similarly, doctors did not differ on these items according to years of clinical practice (all P>.05).

FIGURE 1



Percentage of fertility specialists indicating use of specific clinical practice strategies, availability of clinical guidelines, and training needs relating to eating disorders (n = 80).

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DISCUSSION

Knowledge of Diagnostic Criteria

In this study, fertility specialists demonstrated uncertainty around weight-related diagnostic criteria, menstrual disturbances, and maladaptive weight control behaviors associated with specific eating disorders. While the majority of fertility doctors correctly viewed AN as a disturbance in self-perceived weight and shape (85%), only 53.8% of fertility doctors were cognizant of the weight threshold for clinical concern. For AN, this is body weight less than 85% of that expected for height and age or, as defined in the comparative ICD-10 classification system, a BMI threshold less than 17.5 kg/m^2 (40). Similarly, a minority of doctors (16.2%) recognized that women with BN characteristically have a BMI above AN weight diagnostic criteria, with the BN disorder more typically being associated with normal or overweight weight status (i.e., BMI greater than 18.5 kg/m^2) (42). From a fertility specialist perspective, knowledge about BMI thresholds of concern are not only important from the viewpoint of assessment and referral of a patient suspected of having an eating disorder but are also clinically relevant to influencing decisions about commencing fertility treatment (12).

Similar to findings by Jones et al. (34), fertility specialists' knowledge of menstrual disturbances secondary to eating disorders also revealed gaps, with 30% of doctors accurately specifying the DSM-IV criteria of absence of three consecutive cycles as being required for a confirmatory diagnosis of AN and a further 27.5% misconstruing an absence of six consecutive menstrual cycles as required for diagnosis. Even though surveillance of an eating disorder may not be

TABLE 3

Fertility specialists' attitudes to clinical practice regarding eating disorders (n = 80).

Item	SD	D	N	A	SA
It is important to screen for current eating disorders during preconception assessments	0.0	3.8	12.5	61.2	22.5
Women with eating disorders should treat their eating disorders before starting fertility treatment	0.0	5.0	5.0	56.2	33.8
It is important to routinely ask about exercise behaviors	0.0	3.8	6.2	62.5	27.5
Women who have very low or very high BMI should be referred to a dietician	1.2	3.8	7.5	56.2	31.2
Assessing patients for eating disorders is not my clinical role	12.5	53.8	20.0	13.8	0.0
There is not enough time to assess for eating disorders at initial consultations	5.0	33.8	22.5	32.5	6.2
I am confident in my ability to identify symptoms of eating disorders	1.2	32.5	28.8	35.0	2.5
Information on eating disorders is not of prime importance	13.8	58.8	18.8	8.8	0.0

Note: All ratings are on a 5-point Likert Scale (SD, strongly disagree = 1; D, disagree = 2; N, neither agree/disagree = 3; A, agree = 4; SA, strongly agree=5). Values are n (%) of participants rating each item. Percentages do not sum to 100 owing to rounding.

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perceived as the core business of fertility specialists, knowledge about contributors to menstrual disturbances are (18, 43). Consequently, despite amenorrhea being removed as a diagnostic construct from the contemporary DSM-5 classification system (15), its clinical utility as an exploratory marker of eating disorders in the context of reproductive medicine remains important (43).

Gaps in knowledge about maladaptive weight control behaviors associated with an eating disorder were evident. Key diagnostic criteria of extreme weight-control behaviors (e.g., self-induced vomiting, diuretics, and laxative use and/or driven exercise), while correctly selected for BN, were misconstrued as similarly being required criteria for BED. BED involves the consumption of excessively large quantities of food without accompanying compensatory weight control behaviors. Uncontrollable binge eating episodes, as experienced by BED patients, are associated with negative affect, guilt, and shame and have been linked to a reduced ability to cope with stressful situations (44, 45). Fifty percent of doctors in this study recognized the diagnostic criterion of marked distress associated with BED. As BED statistically represents the most common form of eating disorder (8), knowledge and detection of BED-related distress by medical personnel are important to ensure timely referral of distressed patients to mental health programs for psychotherapeutic care.

Attitudes towards Clinical Practices Associated with Eating Disorders

Fertility specialists maintained a positive attitude towards clinical practices associated with eating disorders. Doctors viewed information about eating disorders to be important, expressed that they had an important role to play in assessment, and supported fertility treatment suspension until a patient's eating disorder had resolved. While the majority of doctors (83.7%) in our study agreed or strongly agreed it was important to screen for current eating disorders in preconception assessments, only 35% routinely did this, and caution was expressed about the amount of time available to assess for eating disorders, a perspective found in other medical studies (33). Opportunities to increase knowledge about simple screening tools (e.g., the five-item SCOFF questionnaire) (46) and awareness of resources relevant to eating disorders through professional college training programs and liaison with mental health professionals expert in eating disorders are therefore essential and may circumvent concerns about time constraints.

Contrary to findings by Abraham (38) on the clinical practices of obstetricians, the assessment of BMI and exercise levels were deemed routine practice by the majority of fertility specialists and more so when patients presented with low BMI, PCOS, and ovulatory disorders. It is important, however, that doctors have an awareness that patients presenting with normal BMI parameters and who self-report in engaging in healthy behaviors such as exercise and a nutritious diet may potentially still have an undisclosed eating disorder. That is, unlike women with AN who have an observable low BMI, those with BN may represent a diagnostic challenge as they typically present within the healthy weight range (42) and are likely to conceal their disorder unless discerning questions are asked. Consequently, attuned discussion about weight history, eating, and exercise attitudes and maladaptive weight control behaviors (e.g., extreme dietary restrictions, purging, and laxative use), irrespective of the current BMI, are more likely to be instructive in the detection of an eating disorder.

Confidence Levels and Training Needs

Research suggests that physicians have a low suspicion for eating disorders and may fail to detect eating disorders (47). Despite denial and secrecy being components of eating disorders, women are open to disclosing their symptoms in clinical settings when directly queried (48, 49). Paralleling the findings of other studies involving medical practitioners (32–34), participants in this study expressed uncertainty in their knowledge about eating disorders, with only 37.5% of fertility specialists agreeing or strongly agreeing that they were confident in their ability to identify eating disorder symptoms. Consequently, it is feasible that women with an eating disorder may go undetected while undergoing fertility treatment, which has implications for patient well-being including mental health, treatment success, and obstetric outcomes.

Our study highlights a need to address the knowledge gaps of fertility specialists on the topic of eating disorders. A minority of fertility specialists (8.8%) reported having access to a clinical protocol to guide management after patient disclosure of an eating disorder, and 96.2% of fertility specialist reported a need for further education and guidance. Currently, the typical pathways for accessing training or provision of clinical practice guidelines for fertility specialists within Australia and New Zealand are through the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) generally, or specifically through the RANZCOG subspecialty Certificate of Reproduction Endocrinology and Infertility (CREI) training program. While RANZCOG has produced several statements and guidelines with respect to pregnancy-related physical and mental well-being (e.g., RANZCOG statement C-Obs 03[a]; C-Obs [48]; C-Obs [49]; https://www.ranzcog.edu.au/college-statements-guidelines.html), no curricula or clinical consensus guidelines exist with regards to the specific gynecological aspects of eating disorders, on screening protocols or management and referral pathways, upon fertility patient disclosure of an eating disorder. Similarly, while nutrition and lifestyle factors are covered within the CREI curriculum, information pertaining to eating disorders is not specifically referenced (personal communication with College CREI examiner Associate Professor Peter Illingworth), a gap in professional training likely to be mirrored in other international reproductive medicine organizations (e.g., the American Congress of Obstetricians and Gynecologists). Research has shown that improvement in knowledge and clinical competence can be achieved by e-learning options and educational workshops (50–52) and is worthy of consideration given the serious nature of eating disorders

and their impact on reproductive physiology and outcomes. Furthermore, collaboration with professional organizations that have established clinical practice guidelines on eating disorders would be beneficial (53, 54).

Limitations and Strengths

While offering important insights into fertility specialists' knowledge and attitudes towards eating disorders, the current study is not without limitations. First, the phrasing of items within the attitudinal section of the questionnaire may have led participants to provide socially desirable responses reflective of best practice rather than of their own actual beliefs and real-life behaviors. Second, the use of a self-report online questionnaire methodology versus interview meant that participants were potentially able to access the solutions to the diagnostic criteria knowledge questions, which would have an impact on the validity of the results. Third, while participants were asked to respond according to a DSM-IV framework, it was possible that some participants may not have been specifically trained in this diagnostic framework, with the potential to influence their responses. The strength of this study lies in the participation by a representative sample of fertility specialists with diverse areas of fertility-related clinical expertise who were also members of the FSA, Australia and New Zealand's peak professional organization on reproductive medicine. Finally, as our research investigating fertility specialist knowledge and assessment of eating disorders is novel, the findings in this study give a platform to an area of fertility practice both unexplored and directly important within preconception care.

Conclusions

Eating disorders are known to influence physical, mental, and reproductive health, with serious implications for the prospective mother and child. Detection of eating disorders before fertility treatment is essential for patient physical and mental health and has direct bearing upon patient education about the clinical implications of an eating disorder and timely referral and collaboration with relevant mental health intervention services. Familiarity with assessment and/or screening strategies for women with an eating disorder is therefore important within the context of preconception care. While this study found uncertainty among fertility specialists in detecting features of eating disorders, it revealed that overall, fertility specialists expressed an interest in gaining further knowledge about eating disorders and perceived that due to the implications of eating disorders for fertility and obstetric outcomes, they had an important role to contribute to diagnosis. This study highlights the necessity for greater eating disorder education and training for fertility doctors, the incorporation of brief screening tools into preconception assessments, and a recommendation for the development of collaborative clinical practice guidelines on eating disorders by relevant professional organizations specific to fertility.

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