Emergency Medicine Physicians' Knowledge and Perceptions of Training, Education, and Resources in Eating Disorders

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Abstract

Background: Eating disorders, specifically anorexia nervosa, have one of the highest mortality rates of all mental illnesses.(1) Knowledge and perceptions of patients with eating disorders (ED) in the Emergency Medicine (EM) specialty is not explored. EM physicians may be the first or only provider a patient interacts with. The purpose of this study is to explore previous training/education, perceptions of available resources, and educational needs in treating eating disorders in practicing Emergency Medicine (EM) physicians.

Methods: A 36-question investigator-developed survey was used in this cross-sectional study. Data were extracted from Opinio for statistical analyses. SAS 9.4 was used to analyze data. The survey assessed EM physicians' previous training, education, and confidence in treating and diagnosing eating disorders in adults and adolescents. The primary outcomes assessed were participants' previous training/education in eating disorders, knowledge of resources for patients, and educational needs.

Results: Of the 162 participants, just 1.9% completed a rotation on eating disorders during residency. Ninety-three percent were unfamiliar with the American Psychiatric Association's Practice Guideline for the Treatment of Patients with Eating Disorders; 95% were unfamiliar with the publication, "ED [Emergency Department] management of patients with eating disorders". At least 50% were unaware of seven of the ten resources for patients with eating disorders examined. At least 50% agreed additional education on 15 of the 19 topics examined would be useful; 85% agreed to education on assessment of patients with eating disorders in the ED.

Conclusions: Providing EM physicians with comprehensive education and training and increasing awareness of eating disorder resources could result in identifying more patients with eating disorders to increase treatment post-discharge.

Plain English Summary

This research was an online survey study that assessed Emergency Medicine (EM) physician's knowledge and perceptions of adult and adolescent eating disorders. Results suggest that few EM physicians completed an eating disorder rotation after medical school and the majority were not aware of patient management guidelines. Participants lacked knowledge of follow-up treatment resources for patients with eating disorders and wanted additional training on a variety of topics. Providing EM physicians with additional training and resources for patients with eating disorders could improve referral rates and the number of patients seeking treatment for an eating disorder post-discharge.

Background

Eating disorders, specifically anorexia nervosa, have one of the highest mortality rates of all mental illnesses.(1) There are many types of eating disorders including anorexia nervosa, bulimia nervosa, binge eating disorder, and other specified feeding and eating disorders, each manifesting with a variety of signs

and symptoms.(2) Symptoms of eating disorders can be physically and biochemically apparent but may not be linked to disordered eating when patients present to physicians. Individuals with eating disorders may choose not to disclose the eating disorder or do not recognize severity of disordered behaviors.(3) Diagnosis may also be missed due to providers' lack of education or training regarding eating disorders.(3)

A national survey of eating disorder training across five medical specialty residency programs (internal medicine, pediatrics, family medicine, psychiatry, and child and adolescent psychiatry) found that the majority of these programs did not provide any scheduled or elective rotations for eating disorders.(4) Physicians also report low comfort levels when managing patients with eating disorders due to lack of undergraduate and postgraduate training.(5)

The Emergency Medicine (EM) specialty represents an opportunity for early identification of individuals with eating disorders. EM physicians may be the first or only provider a patient interacts with. Adolescent and young adult patients with eating disorders with previous visits to the Emergency Department (ED) are 1.6 times more likely to visit the ED than those without eating disorders.(6) In a separate study, more than half of children and adolescents with mental health problems who presented at the ED had not previously received mental health outpatient services.(7) Emergency Medicine physicians could have a critical role in identifying patients with eating disorders.

The purpose of this study is to explore previous training/education and knowledge of available resources in treating adult and adolescent patients with eating disorders in a sample of practicing EM physicians in the United States. In addition, future educational needs on topics related to eating disorders were assessed.

Methods

Study Design and Setting:

A 36-question investigator-developed survey was used to collect data in this cross-sectional study. The survey included basic demographic questions and assessed EM physicians' previous training, education, knowledge of treatment-related resources, and education and training needs in treating and diagnosing eating disorders in adults and adolescence. Survey questions were developed using current literature and the final survey was reviewed by the Chair of a University Psychology Department and the National Eating Disorder Association (NEDA). The survey was administered through the online survey platform, Opinio.

Selection and Description of Participants:

Participants were recruited by email. The principal investigator first contacted all EM Residency Program Coordinators listed on the American College of Emergency Physicians' website. This email included a request to forward information about the study and a link to participate to EM residents and physicians in their department and professional networks. Interested participants clicked a link to the survey in the

recruitment email and were directed to an informed consent. After consent, participants were screened for eligibility to participate. Inclusion criteria for participation were 1) practicing physician or medical resident and 2) currently working (full-time, part-time, or PRN) in an ED. Participants were excluded if they did not meet both inclusion criteria. This study received approval from the University of New Mexico Institutional Review Board.

Measures:

The survey was available in Opinio from April to June 2018. Two reminders to participate were sent to EM Program Coordinators to distribute to their faculty and networks at the midpoint and two weeks prior to survey closure. After completion of the survey, participants had the option of emailing the study team to be eligible to receive a $25 incentive. Five participants were randomly chosen at the end of the study to receive a $25 gift card. The data were stored on Opinio.

Outcomes:

To assess prior education and training, participants were asked if they received training on eating disorders in medical school and if they completed a scheduled or elective rotation on eating disorders during residency. Participants could also indicate other education/training they had received on eating disorders and if it was mandatory or elective. Participants were asked if they were familiar with the American Psychiatric Association's Practice Guideline for the Treatment of Patients with Eating Disorders and Trent et al.'s 2013 publication, "ED [Emergency Department] management of patients with eating disorders" in the American Journal of EM.(2, 8) These practice guidelines discuss developing and implementing a treatment plan to include psychiatric management for the patient with eating disorders. (8)

To assess knowledge of resources, participants were asked to indicate agreement to being knowledgeable via Likert scale about a variety of resources, treatment options, and eating disorder organizations in their location for patients with suspected or diagnosed eating disorders after an ED visit. To assess education and training needs, participants were asked to indicate agreement to the usefulness of additional education and training on a variety of eating-disorder related topics via Likert scale.

Statistics:

As this was a pilot study, a power analysis was not conducted. Participants who completed at least 50% of the survey, including at least one of the primary research questions, were eligible for inclusion in the final sample. Data were extracted from Opinio for statistical analyses. SAS 9.4 was used to analyze data. For continuous variables, normality was assessed using the Shapiro-Wilk statistic. For normally distributed linear data, means and standard deviations are reported; for nonparametric data, medians and interquartile range (IQR) are reported. For categorical data, frequencies and percentages are reported. For Likert scale questions, percent strongly disagree and disagree were combined to "Disagree" and percent strongly agree and agree were combined to "Agree". A p-value of ≤ 0.05 was considered significant.

Results

Characteristics of study subjects:

Two-hundred thirty-eight residency programs were contacted by email to distribute the survey to their EM faculty and networks. Over the four-week period the survey was available, 219 participants started the survey. Six did not meet inclusion criteria and 51 did not complete the survey, leaving 162 (74%) participants in the final sample **(Table 1)**. Of the 162 participants, 150 completed all survey questions.

Of the 162 participants, median age was 31 years (range 25-65 years). The majority were female (n=84; 51.8%), Caucasian (n=118; 72.8%), and had practiced for less than five years in the ED (n=116; 71.6%). In the sample of participants, 23 states were represented. The majority of participants reported practicing primarily in California (n=21), Ohio (n=19), Missouri (n=17), New York (n=15), or Arizona (n=13). Based on Census Bureau defined regions, the majority of participants practiced in the Midwest (n=61; 37.7%).

Table 1. Demographic Characteristics of Participants (n=162)

Characteristic	Median (IQR)	n	%
Age (years)	31 (29-35)		
Gender			
Male		78	48.2%
Female		84	51.8%
Race/Ethnicity			
African American		4	2.5%
Asian/Pacific Islander		20	12.3%
Caucasian		118	72.8%
Hispanic		6	3.7%
Native American		0	0%
Other		5	3.1%
> 1 Race/Ethnicity		9	5.6%
Geographic Region of Practice			
Northeast		31	19.1%
Midwest		61	37.7%
South		30	18.5%
West		38	23.5%
Not reported		2	1.2%
Full-time practice (years)	3 (1-5)		
Full-time practice in ED (years)	3 (1-5)		
Experience in the ED			
< 5 years		116	71.6%
≥ 5 years		41	25.3%
Not reported		5	3.1%

Abbreviations: IQR = interquartile range; ED = Emergency Department

The majority of participants reported receiving training on eating disorders in medical school (n=138; 85.7%). Of those who did receive training on eating disorders in medical school, 68 (49.3%) reported

training was inadequate. Only three participants (1.9%) reported completing a scheduled or elective rotation on eating disorders during residency. The majority (n=152; 93.8%) reported they did not complete a scheduled or elective rotation on eating disorders during residency because it was not offered.

Main results:

Most respondents were not familiar with the American Psychiatric Association's Practice Guideline for the Treatment of Patients with Eating Disorders (n=151; 93.2%) or the Trent et al. publication, "ED management of patients with eating disorders" (n=154; 95.1%).

The majority of respondents (>50%) were not knowledgeable about seven of the ten resources in their location for patients with suspected or diagnosed eating disorders after an ED visit. In particular, participants did not agree to being knowledgeable about the Alliance for Eating Disorder Awareness (74.2%), community support groups (73.2%), or online support groups (72%). **(Table 2)**. Most respondents (79%) agreed to being knowledgeable about following up with an appropriate primary care physician after a patient with a suspected or diagnosed eating disorder leaves the ED.

Table 2. Physicians' agreement to knowledge of resources for patients with eating disorders after their ED visit.

Resources	Disagree		Neutral		Agree		
	n	%	n	%	n	%	Total
Alliance for Eating Disorder Awareness	115	74.2	23	14.8	17	11.0	155
Community support groups	115	73.2	21	13.4	21	13.6	157
Online support groups	113	72.0	26	16.6	18	11.5	157
The National Eating Disorders Association	111	70.7	27	17.2	19	12.1	157
Outpatient treatment programs (partial hospitalization program, intensive outpatient program)	107	68.2	28	17.8	22	14.0	157
Residential treatment programs	101	64.3	30	19.1	26	16.6	157
Self-help materials	96	61.1	40	25.5	21	13.4	157
Patient education materials/discharge instructions	41	26.1	37	23.6	79	50.3	157
Outpatient follow up (psychiatrist, psychologist, licensed therapist, dietitian, other)	37	23.6	27	17.2	93	59.2	157
Follow up with primary care physician	12	7.6	21	13.4	124	79.0	157

Abbreviation: ED = Emergency Department

The majority of respondents (>50%) agreed additional education on 15 of the 19 topics included would be useful. The top three educational needs were: assessment of patients with eating disorders in the ED (85% agreement), medical complications (83.7% agreement), and suggested criteria for hospital admission (82.8% agreement). The fewest agreed additional education on food addiction (43.2% agreement) would be useful **(Table 3)**.

Table 3. Physicians' agreement to usefulness of additional education and training on eating disorder-related topics.

Topics	Disagree		Neutral		Agree		
	n	%	n	%	n	%	Total
Assessment of Patients with Eating Disorders in the ED	3	2.0	19	12.9	125	85.0	147
Medical Complications	3	2.0	21	14.3	123	83.7	147
Suggested Criteria for Hospital Admission	3	2.1	22	15.2	120	82.8	145
Resources for Patients with Eating Disorders	4	2.7	29	19.6	115	77.7	148
Treatment Options After ED Discharge	5	3.4	30	20.3	113	76.4	148
Adult eating disorders	4	2.7	33	22.3	111	75.0	148
Pediatric eating disorders	7	4.7	31	20.9	110	74.3	148
Diagnosis of Eating Disorders	7	4.8	31	21.1	109	74.1	147
Diabulimia	9	6.1	50	34.0	88	59.9	147
SCOFF Questionnaire for Screening	18	12.3	43	29.5	85	58.2	146
Bulimia Nervosa	12	8.2	52	35.4	83	56.5	147
Severe and Enduring Anorexia Nervosa	18	12.4	47	32.4	80	55.2	145
Anorexia Nervosa Restrictive Type	18	12.2	50	33.8	80	54.1	148
Anorexia Nervosa Binge-Purge Subtype	18	12.3	50	34.2	78	53.4	146
Binge Eating Disorder	18	12.3	52	35.6	76	52.1	146
Orthorexia	17	11.6	61	41.5	69	46.9	147
Avoidant/ Restrictive Food Intake Disorder	16	10.9	63	42.9	68	46.3	147
Other Specified Feeding or Eating Disorder	19	13.0	61	41.8	66	45.2	146
Food Addiction	24	16.2	60	40.5	64	43.2	148

Abbreviations: ED = Emergency Department; SCOFF Questionnaire = Sick, Control, One, Fat, Food

Discussion

This is the first study examining knowledge and perceptions of eating disorders, and educational needs, in EM physicians in the United States. Results suggest eating disorder training in medical school was provided but not during residency and that EM clinicians need more information and education on available resources for patients with diagnosed or suspected eating disorders.

Overall, most EM physicians were unaware of two clinical practice guidelines: the Practice Guideline for the Treatment of Patients With Eating Disorders published in 2006 by the American Psychiatric Association (APA) and the peer-reviewed article, “ED management of patients with eating disorders” published in 2013 by Trent et al.(2, 8) The APA Guidelines are a gold-standard resource for all types of physicians; however, Trent et al. Guidelines are specific to EM providers. Comprehensive treatment and prospective management of patients with eating disorders does not occur in the Emergency Department, however, EM clinicians can draw from guidelines to develop hospital admission criteria and/or provide follow-up referrals. Knowledge of guidelines and follow-up treatment options are critical as recent studies suggest 15.9% of adult participants screened positive for an eating disorder in the ED (9) and 16% of adolescent and young adults screened positive for an eating disorder in an ED.(10) One study of Australian ED, general, pediatric, and psychiatric clinicians reported previous knowledge of the 2014 Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the treatment of eating disorders was related to increased confidence in treating eating disorders.(11) The APA and the Trent et al. guidelines are open access. Guidelines may also be incorporated into medical school, residency, and fellowship program curriculum.

In the present study, a very high percentage of physicians did not know about resources in their community for patients with eating disorders post-discharge from the ED including treatment programs, support groups, and non-profit organizations. Awareness of treatment options post-ED is essential so that physicians may provide recommendations for follow-up specialty care or referrals to reduce comorbidities of eating disorders. Providing follow-up recommendations to patients and families requires little extra time on the part of the EM clinician and patients may be more likely to seek treatment. If barriers were to exist in the regional area for referrals to eating disorder treatment centers, such as poor accessibility to specialist services, then ED clinicians including physicians, nurses, social workers, and case managers should be aware of affordable and easily assessable resources on the internet or in nearby communities or states.(11) NEDA and the Alliance for Eating Disorder Awareness are two non-profit organizations focusing on advocacy, evidenced-based research, and providing assistance finding treatment for individuals and families who are affected by eating disorders.

Most respondents wanted more education on assessment of eating disorders in the ED, medical complications of eating disorders, and hospital admission criteria for those with eating disorders. Interestingly, one study found that eight out of nine physicians who specialized in mental health, EM, and other specialties, were competent in assessments of eating disorders.(11) A separate study by Linville et al. also examined educational needs of clinicians (obstetricians and gynecologists, family practice

physicians and nurse practitioners, general physicians and nurse practitioners, and pediatricians and pediatric nurse practitioners) related to eating disorders.(12) Respondents indicated that it was difficult for them to successfully screen and treat patients when they were uncertain about the course of treatment or did not have sufficient previous knowledge and training on eating disorders.(12) Educational needs identified in this study and the study by Linville et al. are important to consider implementing in medical training programs and curriculum.(12)

Linville et al. found clinicians wanted a brief screening tool to help identify and diagnose eating disorders.(12) Respondents in this study were also interested in a brief screening tool, specifically the SCOFF questionnaire, developed by Morgan et al. in 1999.(13) The SCOFF questionnaire has five questions and is a quick tool utilized by many health professions to screen for eating disorders.(14–19) It is also recommended in the Trent et al. guidelines for EM clinicians. According to a recent systematic review and meta-analysis, however, the SCOFF questionnaire warrants more studies before being used to screen for eating disorders in primary care and community-based settings.(14) The SCOFF questionnaire is currently available for free on NEDA's website.

The present study has limitations. Approximately 25% of participants who started the survey did not complete it. The number of individuals who received the recruitment email to participate was also not assessed since the study used a snowball sampling approach. Due to the small sample size, results may not be generalizable to the general population of practicing EM physicians. Selection bias could have also occurred as those who decided to complete the survey may have stronger feelings about eating disorders than those who did not participate or complete the survey. Although data indicate EM physicians lack training, education, and knowledge of eating disorders, results may not reflect the entire EM specialty as not all 50 states of the US were represented.

Conclusions

In summary, these findings add to the limited literature about EM physicians and eating disorders. Future research may include a larger sample of EM physicians and include the provision of education to determine if additional training on eating disorders improves recognition of patients with signs and symptoms and referral to appropriate follow-up treatment. Providing EM physicians with comprehensive education, training, and awareness of resources regarding eating disorders could result in potentially identifying more patients with eating disorders and providing important follow-up resources.

List Of Abbreviations

APA: American Psychiatric Association; ED: Emergency Department; EM: Emergency Medicine; IQR: Interquartile Range; NEDA: The National Eating Disorders Association; SCOFF: Sick, Control, One, Fat, Food.

Declarations

Ethics approval and consent to participate:

This study received approval from the University of New Mexico Institutional Review Board. Documentation of informed consent was waived for this study.

Consent for publication

Not applicable.

Availability of data and materials

The dataset analyzed during the current study is available from the corresponding author on reasonable request.

Competing interest

The authors declare that they have no competing interests.

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Authors' contributions

CM assisted with data analysis and write up of the manuscript. DGP and JC assisted with editing the manuscript. KC designed the initial survey, contacted all EM Residency Program Coordinators, conducted statistical analysis and interpretation, primary editor, and final approver and corresponding author of the manuscript.

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