

# Making Gains in Eating Disorders Outcomes Research

Mark L. Norris, MD,<sup>a</sup> Jennifer Couturier, MD<sup>b</sup>

In this issue of *Pediatrics*, Golden et al<sup>1</sup> present 1-year follow-up data from a randomized controlled trial in which researchers examined differences between higher-calorie refeeding (HCR) and lower-calorie refeeding (LCR) during initial hospitalization for the treatment of anorexia nervosa (AN) and atypical anorexia nervosa (AAN) in 111 youth. The initial study demonstrated that HCR restored medical stability earlier and safely, as compared to LCR.<sup>2</sup> Of note, both groups reached the threshold required for medical stability on average by 10 days, and patients who received HCR had hospital stays on average 4 days shorter than those in the LCR group, amounting to nearly \$20 000 saved per patient.<sup>2</sup> Although overall hospitalization rates of youth with AN in the United States are scant, census data and conservative eating disorder prevalence modeling suggest that cost savings associated with the use of HCR could result in tens of millions of health care dollars saved annually when compared to LCR.<sup>3-5</sup> Given recent estimates that direct overall health systems costs for individuals with eating disorders in the United States alone surpassed 4.5 billion dollars in 2018-2019, these results are not only statistically but economically meaningful.<sup>3</sup> In the present 1-year follow-up study, the authors reported no differences in rates of clinical remission, medical rehospitalization, number of medical readmissions, or number of days medically hospitalized, countering speculation that more aggressive inpatient refeeding protocols for AN might result in increased rates of

rehospitalization.<sup>1,6</sup> It is important to note that in this study, patients with a median BMI (mBMI) <60% were excluded, which means that we do not have any evidence to indicate whether HCR is safe for very low-weight patients. Further studies in which researchers explore how such protocols are tolerated by very low-weight patients are required to better understand the utility of this treatment approach across varying patient populations.

Clinical remission in this study was defined as weight restoration ( $\geq 95\%$  mBMI) and psychological recovery (as measured by attaining scores within 1 SD of community norms on the Eating Disorder Examination Questionnaire [EDE-Q]). Both groups contained substantial proportions of patients with AAN ( $n = 27$  [53%] for LCR versus 21 [35%] for HCR), which has relevance given the high mBMI percentages noted on admission across both groups ( $>80\%$  in both groups), as well as evolving literature that suggests that patients with AAN have elevated EDE-Q scores, as compared with patients with AN.<sup>7,8</sup> Although cohorts with AN and AAN were likely combined given limitations relating to the total sample size, the study itself represents the largest randomized controlled trial conducted in the field to date and adds to a largely nonexistent database that reports longer-term outcomes associated with the initial intensive inpatient refeeding period.

A health care use questionnaire was administered at follow-up visits, which specifically focused on medical

<sup>a</sup>Department of Pediatrics, Faculty of Medicine, University of Ottawa and Children's Hospital of Eastern Ontario, Ontario; and <sup>b</sup>Department of Child and Adolescent Psychiatry, McMaster Children's Hospital, Hamilton Health Sciences and Department of Psychiatry and Behavioural Neurosciences, McMaster University, Hamilton, Ontario

Opinions expressed in these commentaries are those of the authors and not necessarily those of the American Academy of Pediatrics or its Committees.

**DOI:** <https://doi.org/10.1542/peds.2020-043737>

Accepted for publication Jan 26, 2021

Address correspondence to Mark L. Norris, MD, Department of Pediatrics, Children's Hospital of Eastern Ontario, Ottawa, ON, Canada K1S 2C8. E-mail: mnorris@cheo.on.ca

PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

Copyright © 2021 by the American Academy of Pediatrics

**FINANCIAL DISCLOSURE:** The authors have indicated they have no financial relationships relevant to this article to disclose.

**FUNDING:** No external funding.

**POTENTIAL CONFLICT OF INTEREST:** The authors have indicated they have no potential conflicts of interest to disclose.

**COMPANION PAPER:** A companion to this article can be found online at [www.pediatrics.org/cgi/doi/10.1542/peds.2020-037135](http://www.pediatrics.org/cgi/doi/10.1542/peds.2020-037135).

**To cite:** Norris ML and Couturier J. Making Gains in Eating Disorders Outcomes Research. *Pediatrics*. 2021;147(4):e2020043737

hospitalizations required after initial treatment. Although linked to the primary outcome measures of the study, the lack of data and outcome variables relating to psychological treatments received highlight the need for more controlled prospective studies in which patients are followed over their entire course of treatment and researchers report outcomes at various stages of care. More specifically, given patients in both groups failed to demonstrate any meaningful changes in EDE-Q scores between 3 and 12 months despite meeting criteria for weight recovery, it would be interesting to know what psychological treatments (ie, family-based therapy, partial hospitalization programs, residential care, etc) or adjunctive psychotropic medications were administered to better understand whether specific pathways of care, or treatments received, resulted in differential rates of remission across groups. Additionally, including patient and caregiver experience and satisfaction with HCR versus LCR would be important. Understandably, limitations relating to health care access, insurance requirements, and substantial heterogeneity in treatments delivered across varying settings limit the utility of naturalistic studies in this area. Furthermore, as revealed once again in the study by Golden et al, barriers relating to patient recruitment also increase difficulties associated with study completion, as commonly seen in this field.<sup>9</sup> Given rates of remission at 12 months were <30% among both groups, and meta-analyses suggest that specialized treatments do not reveal changes in psychological outcomes at long-term follow-up, further study in which researchers

explore how treatment-goal weight calculation (especially in patients with higher premorbid weights and body mass indexes) correlates not only with markers of physiologic recovery but also with specific psychological symptoms of AN would help further our understanding of how treatment approaches can be tailored to better optimize rates of remission and overall long-term recovery.<sup>9-12</sup>

#### ABBREVIATIONS

AN: anorexia nervosa  
 AAN: atypical anorexia nervosa  
 EDE-Q: Eating Disorder Examination Questionnaire  
 mBMI: median BMI  
 HCR: higher-calorie refeeding  
 LCR: lower-calorie refeeding

#### REFERENCES

1. Golden NH, Cheng J, Kapphahn CY, et al. Higher calorie refeeding in anorexia nervosa: 1-year outcomes from a randomized controlled trial. *Pediatrics*. 2021;147(4):e2020037135
2. Garber AK, Cheng J, Accurso EC, et al. Short-term outcomes of the study of refeeding to optimize inpatient Gains for patients with anorexia nervosa: a multicenter randomized clinical trial. *JAMA Pediatr*. 2021;175(1):19–27
3. Deloitte Access Economics. The social and economic cost of eating disorders in the United States of America: a report for the Strategic Training Initiative for the Prevention of Eating Disorders and the Academy for Eating Disorders. 2020. Available at: <https://cdn1.sph.harvard.edu/wp-content/uploads/sites/1267/2020/07/Social-Economic-Cost-of-Eating-Disorders-in-US.pdf>. Accessed January 8, 2021

4. United States Census Bureau. Age and sex composition in the United States: 2019. Available at: <https://www.census.gov/data/tables/2019/demo/age-and-sex/2019-age-sex-composition.html>. Accessed January 4, 2021
5. Robergeau K, Joseph J, Silber TJ. Hospitalization of children and adolescents for eating disorders in the State of New York. *J Adolesc Health*. 2006;39(6):806–810
6. Willer MG, Thuras P, Crow SJ. Implications of the changing use of hospitalization to treat anorexia nervosa. *Am J Psychiatry*. 2005;162(12):2374–2376
7. Garber AK, Cheng J, Accurso EC, et al. Weight loss and illness severity in adolescents with atypical anorexia nervosa. *Pediatrics*. 2019;144(6):e20192339
8. Sawyer SM, Whitelaw M, Le Grange D, Yeo M, Hughes EK. Physical and psychological morbidity in adolescents with atypical anorexia nervosa. *Pediatrics*. 2016;137(4):e20154080
9. Norris ML, Spettigue W, Buchholz A, Henderson KA. Challenges associated with controlled psychopharmacological research trials in adolescents with eating disorders. *J Can Acad Child Adolesc Psychiatry*. 2007;16(4):167–172
10. Murray SB, Quintana DS, Loeb KL, Griffiths S, Le Grange D. Treatment outcomes for anorexia nervosa: a systematic review and meta-analysis of randomized controlled trials. *Psychol Med*. 2019;49(4):535–544
11. Norris ML, Hiebert JD, Katzman DK. Determining treatment goal weights for children and adolescents with anorexia nervosa. *Paediatr Child Health*. 2018;23(8):551–552
12. Golden NH, Katzman DK, Sawyer SM, et al. Update on the medical management of eating disorders in adolescents. *J Adolesc Health*. 2015;56(4):370–375

## Making Gains in Eating Disorders Outcomes Research

Mark L. Norris and Jennifer Couturier

*Pediatrics* 2021;147;

DOI: 10.1542/peds.2020-043737 originally published online March 22, 2021;

### Updated Information & Services

including high resolution figures, can be found at:  
<http://pediatrics.aappublications.org/content/147/4/e2020043737>

### References

This article cites 10 articles, 3 of which you can access for free at:  
<http://pediatrics.aappublications.org/content/147/4/e2020043737#BL>

### Subspecialty Collections

This article, along with others on similar topics, appears in the following collection(s):  
**Adolescent Health/Medicine**  
[http://www.aappublications.org/cgi/collection/adolescent\\_health\\_medicine\\_sub](http://www.aappublications.org/cgi/collection/adolescent_health_medicine_sub)

### Permissions & Licensing

Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:  
<http://www.aappublications.org/site/misc/Permissions.xhtml>

### Reprints

Information about ordering reprints can be found online:  
<http://www.aappublications.org/site/misc/reprints.xhtml>

# American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®



# PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

## **Making Gains in Eating Disorders Outcomes Research**

Mark L. Norris and Jennifer Couturier

*Pediatrics* 2021;147;

DOI: 10.1542/peds.2020-043737 originally published online March 22, 2021;

The online version of this article, along with updated information and services, is located on the World Wide Web at:

<http://pediatrics.aappublications.org/content/147/4/e2020043737>

Pediatrics is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since 1948. Pediatrics is owned, published, and trademarked by the American Academy of Pediatrics, 345 Park Avenue, Itasca, Illinois, 60143. Copyright © 2021 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 1073-0397.

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®

