

CURRENT PRACTICES IN RESIDENTIAL TREATMENT OF CO-OCCURRING EATING DISORDERS AND TYPE I DIABETES

Megan Austin, MS, RD, CD
Center for Change

OUTLINE

Background Information

Overview of Research Conducted

Research Results

Discussion and Clinical Applications

Conclusion

LEARNING OBJECTIVES

1. Describe the unique treatment needs of patients with the diagnosis of Eating Disorder-Diabetes Mellitus Type I (ED-DMT I)

2. Explain the importance of an interdisciplinary treatment team and their roles in treatment of patients with ED-DMT I

3. Discuss current practices and areas for improvement or future research related to treatment practices for patients with ED-DMT I in a residential eating disorder treatment setting

BACKGROUND – TYPE I DIABETES

- Type I Diabetes Mellitus (T1DM) is an autoimmune disease that causes destruction of pancreatic beta cells leading to insulin deficiency¹
- Exogenous insulin is required to manage blood glucose levels
- Diabetic Ketoacidosis (DKA) is a potentially life-threatening condition that can result from untreated high blood glucose levels**
- Hemoglobin A1c (HbA1c) is a blood test that estimates blood sugar levels over the previous 2-3 months, and the recommended level in those with type I diabetes is <7%⁴



BACKGROUND – EATING DISORDERS

- Anorexia Nervosa
- There are two subtypes of anorexia nervosa: restricting type and binge-eating/purging type²
- There are different levels of severity based on body mass index (BMI), ranging from mild (BMI greater than or equal to 17 kg/m²) to extreme (BMI of 15 kg/m² or less)²

BACKGROUND – EATING DISORDERS

- Bulimia Nervosa
- Levels of severity range from mild (~1-3 episodes of inappropriate compensatory behaviors per week) to extreme (~14 episodes or more of inappropriate compensatory behaviors per week)²

BACKGROUND – ED-DMT I

- Increased risk of developing an eating disorder⁶
- Insulin omission^{7**}
- Longer residential treatment stays are associated with better outcomes in ED-DMTI patients⁶
- Little research has been done on recommendations for clinical practice in treating patients with ED-DMTI

BACKGROUND – ED-DMT I

- Effect of diabetes treatment on eating disorder risk⁸
- Warnings signs of ED-DMTI^{1**}:
 - Unexplained increase in HbA1c
 - Repeated episodes of DKA
 - Extreme concerns of body shape/size
 - Excessive exercise and hypoglycemia
 - Very low-calorie meals
 - Absence of menstruation

BACKGROUND – ED TREATMENT

- Residential ED treatment⁵
- Multidisciplinary treatment team¹⁰
- Longer treatment stays in residential levels of care are associated with better outcomes in those with type I diabetes and eating disorders⁶
- Treating ED and diabetes simultaneously¹²

NO STANDARD OF CARE TO TREAT
ED-DMT I IN RESIDENTIAL SETTING



METHODS

- Identified 104 eligible ED facilities in the US
- 19 total interviews conducted
- 19 item interview guide:
 - Please describe the nutritional philosophies of your facility's treatment program.
 - In what ways, if any, are meal plans for patients with diabetes different from other patients?
 - How would you describe the insulin therapy process at your facility?
 - Describe how a patient's blood sugar is monitored throughout the treatment stay.
 - How satisfied are you with your team's current processes?



METHODS

- Qualtrics demographic survey
 - How many beds does your facility have?
 - Which genders/gender identities are accepted in 24-hour care programs at your facility? (Check all that apply)
 - What is the minimum age that is accepted into 24-hour care programs at your facility?
 - Approximately how many patients with ED-DMT1 were treated at your facility in 2019?
- Final question was prompt for interview scheduling



METHODS

- ~30-60-minute interview over Zoom (audio and video recorded)
- Verbatim transcription of interviews
- Excluded one interview due to bias
- Interview participants compensated with \$25 Amazon gift cards



METHODS

- Case study design for qualitative analysis^{14**}
- Identified descriptive framework¹⁷
- Created case descriptions for each interview
- Data immersion
- Identified uniform categories

METHODS

Cases (n=18)	SUGGESTIONS FOR IMPROVEMENT
1	Lack of resources for the therapy team
2	Process that allows RD to see diabetes logs easier and closer to real-time
3	Need more policies in place; Increase dietitian awareness of diabetes policies
4	Utilize diabetes technology sooner during treatment
5	None
6	Staff education on diabetes/management; CDCES on staff
7	More education
8	Increase patient autonomy with diabetes care under staff supervision
9	Reeducation every time due to treating few patients with diabetes
10	More structured policies about diabetes to create a more streamlined approach
11	More education; CDCES on site
12	Communication between dietitian and therapist
13	CDCES on staff; Specialized training for one dietitian to be the "go-to" diabetes person
14	Diabetes specific questions on admission assessment
15	Stronger nursing and medical team
16	Getting labs back sooner; More staff education; Client family education
17	More education; Endocrinologist
18	More policies and procedures; Education about adequate diabetes testing; 24-hour nursing care; Eating disorder informed physician

METHODS

- Identified 4 themes:
 - 1. Nutrition Interventions for Patients with Diabetes
 - 2. Medical Diabetes Management
 - 3. Interdisciplinary Diabetes Team
 - 4. Clinical Nutrition Manager's Assessment of Diabetes Care

RESULTS – THEME 1: NUTRITION INTERVENTIONS FOR PATIENTS WITH DIABETES

- Nutritional philosophies
- Weighing practices
- 3 meals and 2-3 snacks daily
- Exchange-based meal plans**
- Patients allowed to plate/portion food under supervision
- Carbohydrate monitoring

RESULTS – THEME 2: MEDICAL DIABETES MANAGEMENT

- Continuous glucose monitor (CGM) and insulin pump use
- Finger sticks
- Patients allowed to check blood glucose under supervision
- Frequency of blood glucose monitoring
- Gradual transition of patient responsibility
- Insulin regimens
- Managing high/low blood glucose levels

RESULTS – THEME 2: MEDICAL DIABETES MANAGEMENT

- Hemoglobin A1c (HbA1c) monitoring
- Urinary ketones
- Screening for diabetes complications
- No difference in exercise routines

RESULTS – THEME 3: INTERDISCIPLINARY DIABETES TEAM

Table 2. Treatment team members identified for patients with eating disorders and type 1 diabetes in residential treatment facilities

Treatment Team Members	Interview Participants																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Dietitian or Nutritionist	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Therapist	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Medical Provider	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Psychiatric Provider	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Nursing Manager or Nurse	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Social Worker or Case Manager	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Eating Team Manager	*																	
Clinical Manager	*							*										
State Director	*																	
Psychologist							*											
Behavioral Specialist						*												
Patient							*											
Program Director									*						*			
Facility Manager													*					
Behavioral Director								*							*			
Diet Technician																		
Behavioral Technician															*			
Certified Diabetes Care and Education Specialist (CDCES)				*														
Endocrinologist as a Consultant	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

RESULTS – THEME 3: INTERDISCIPLINARY DIABETES TEAM

- Knowledgeable about nutrition interventions
- Experience with patients with diabetes
- Knowledge deficit related to medical practices, insulin regimens, blood glucose management, etc.
- Dietitian heavily involved in diabetes education**
- Diabetes education topics
- Diabetes-related therapeutic topics
- No diabetes specific groups

RESULTS – THEME 4: CLINICAL NUTRITION MANAGER'S ASSESSMENT OF DIABETES CARE

- Six clinical nutrition managers did not identify any strengths
- “Work in progress”
- Areas of strength: medical management (n=3), treatment team communication and collaboration (n=3), and individualized approach to patient care (n=4)
- Only one clinical nutrition manager had no suggestions for improvement
- Areas for improvement: improved or increased education for staff (n=8), more formal diabetes treatment policies (n=3), stronger medical support (n=3), hiring a CDCES (n=3), and quicker access to labs and blood glucose logs (n=2)

DISCUSSION AND CLINICAL APPLICATIONS

Nutritional Philosophies (Intuitive Eating®, All foods fit, etc.)

PROS**

- Increased flexibility and less emotion-driven eating
- Worse glycemic control/higher HbA1c with emotion-drive and disordered eating behaviors¹⁶

CONS

- Potentially challenging to eat more intuitively/with flexibility due to eating dictated by insulin or blood glucose levels

DISCUSSION AND CLINICAL APPLICATIONS

- Exchange based meal plans well suited for patients with diabetes
- Meal plan structure provides basis for carbohydrate counting
- Carbohydrate counting associated with improved glycemic management¹⁵

DISCUSSION AND CLINICAL APPLICATIONS

PROS OF USING DIABETES TECHNOLOGY**

- CGMs provide more complete blood glucose information
- CGM use eliminates/decreases finger sticks
- Insulin pumps decrease need for injections
- More flexible eating with insulin pumps

CONS OF USING DIABETES TECHNOLOGY

- Constant information may contribute to obsessive thoughts around diabetes numbers/perfectionism
- Additional staff training for diabetes technology

DISCUSSION AND CLINICAL APPLICATIONS

- Concerned that not all patients were supervised while administering insulin
- Lack of formal policies (or lack of awareness)
- Medical and biochemical monitoring can provide checks and balances

DISCUSSION AND CLINICAL APPLICATIONS

- Interdisciplinary team recommended for both ED and diabetes treatment^{3,11,13}
- Patients with ED-DMTI want interdisciplinary teams⁹
- Consult with a CDCES
- Patients with ED-DMTI have highlighted importance of peer support⁹

DISCUSSION AND CLINICAL APPLICATIONS

- Professionals want and need more education^{9**}
- Opportunities for staff education^{**}:
 - Inservice trainings
 - Webinars
 - Professional conferences
 - Clinical supervision

CONCLUSION

ED-DMTI represents unique co-occurring disorders that require specialized treatment by an interdisciplinary team of professionals

Education is key

Need more research to develop standards of care for the treatment of ED-DMTI in a residential eating disorder treatment setting

REFERENCES

1. Association, A. D. 2019a. Diabetes Overview. <https://www.diabetes.org/diabetes>. 2019b. Types of Eating Disorders. <https://www.diabetes.org/diabetes/mental-health/eating-disorders>.
2. Association, A. P. 2013. *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)*. American Psychiatric Publishing.
3. Beck, J., Greenwood, D. A., Blanton, L., Bollinger, S. T., Butcher, M. K., Condon, J. E., Cypress, M., Faulkner, P., Fischl, A. H., Francis, T., Kolb, L. E., Lavin-Tompkins, J. M., MacLeod, J., Maryniuk, M., Mensing, C., Orzeck, E. A., Pope, D. D., Pulizzi, J. L., Reed, A. A., Rhinehart, A. S., Siminerio, L., & Wang, J. (2017). 2017 National Standards for Diabetes Self-Management Education and Support. *Diabetes Spectr*, 30(4), 301-314. <https://doi.org/10.2337/ds17-0067>
4. Colton, P. A., M. P. Olmsted, H. Wong & G. M. Rodin (2015) Eating disorders in individuals with type 1 diabetes: case series and day hospital treatment outcome. *European Eating Disorders Review: The Journal Of The Eating Disorders Association*, 23, 312-317.
5. Friedman, K., A. L. Ramirez, S. B. Murray, L. K. Anderson, A. Cusack, K. N. Boutelle & W. H. Kaye (2016) A Narrative Review of Outcome Studies for Residential and Partial Hospital-based Treatment of Eating Disorders. *Eur Eat Disord Rev*, 24, 263-76.
6. Goebel-Fabbri, A., P. Copeland, S. Touyz & P. Hay. 2019. EDITORIAL: Eating disorders in diabetes: Discussion on issues relevant to type 1 diabetes and an overview of the Journal's special issue. *Journal of Eating Disorders*: Springer Nature.
7. Goebel-Fabbri, A. E., J. Fikkan, D. L. Franko, K. Pearson, B. J. Anderson & K. Weinger (2008) Insulin restriction and associated morbidity and mortality in women with type 1 diabetes. *Diabetes Care*, 31, 415-9.
8. Jones, J. M., M. L. Lawson, D. Daneman, M. P. Olmsted & G. Rodin (2000) Eating disorders in adolescent females with and without type 1 diabetes: cross sectional study. *BMJ*, 320, 1563-6.

REFERENCES

9. Macdonald, P., Kan, C., Stadler, M., De Bernier, G. L., Hadjimichalis, A., Le Coguic, A. S., Allan, J., Ismail, K., & Treasure, J. (2018). Eating disorders in people with Type 1 diabetes: experiential perspectives of both clients and healthcare professionals. *Diabet Med*, 35(2), 223-231. <https://doi.org/10.1111/dme.13555>
10. Mairs, R. & D. Nicholls (2016) Assessment and treatment of eating disorders in children and adolescents. *Arch Dis Child*, 101, 1168-1175.
11. Ozier, A. D., Henry, B. W., & Association, A. D. (2011). Position of the American Dietetic Association: nutrition intervention in the treatment of eating disorders. *J Am Diet Assoc*, 111(8), 1236-1241. <https://doi.org/10.1016/j.jada.2011.06.016>
12. Powers, M. A., S. Richter, D. Ackard, S. Gerken, M. Meier & A. Criego (2012) Characteristics of persons with an eating disorder and type 1 diabetes and psychological comparisons with persons with an eating disorder and no diabetes. *Int J Eat Disord*, 45, 252-6.
13. Reiter, C. S., & Graves, L. (2010). Nutrition therapy for eating disorders. *Nutr Clin Pract*, 25(2), 122-136. <https://doi.org/10.1177/0884533610361606>
14. Vaterlaus, J. M., Cottle, N. M., Patten, E. V., & Gibbons, R. (2018). Understanding Customers: The Jobs to Be Done Theory Applied in the Context of a Rural Food Pantry. *J Acad Nutr Diet*, 118(10), 1895-1902. <https://doi.org/10.1016/j.jand.2018.02.011>
15. Vaz, E. C., Porfirio, G. J. M., Nunes, H. R. C., & Nunes-Nogueira, V. D. S. (2018). Effectiveness and safety of carbohydrate counting in the management of adult patients with type 1 diabetes mellitus: a systematic review and meta-analysis. *Arch Endocrinol Metab*, 62(3), 337-345. <https://doi.org/10.20945/2359-3997000000045>
16. Wheeler, B. J., Lawrence, J., Chae, M., Paterson, H., Gray, A. R., Healey, D., Reith, D. M., & Taylor, B. J. (2016). Intuitive eating is associated with glycaemic control in adolescents with type 1 diabetes mellitus. *Appetite*, 96, 160-165. <https://doi.org/10.1016/j.appet.2015.09.016>
17. Yin, R. K. (2017). *Case Study Research and Applications: Design and Methods* (Sixth ed.). SAGE Publications, Inc.



QUESTIONS