

CATEGORY: POPULATIONS/PROGRAMS

Feeding and Eating Disorders Populations & Programs

Feeding and eating disorders are now understood to include a range of disruptive behaviors including anorexia nervosa (AN), bulimia nervosa (BN), binge-eating disorder (BED), avoidant/restrictive food intake disorder (ARFID), purging disorder and other specified feeding or eating disorders according to the *Diagnostic and Statistical Manual of Mental Disorders* 5th edition (DSM-5) and the 11th revision of the *World Health Organization's International Statistical Classification of Diseases and Related Health Problems* (2019). Feeding and eating disorders (FEDs) affect children, adolescents and adults. Researcher Hay suggests that “eating disorders [are] characterised by the internalisation of the thin ideal and extreme weight-control behaviors. In both, overvaluation of weight and shape – where such body image concern is of major or paramount importance to self-view – is a mandatory criterion” (2020). Current thought and understanding places greater emphasis on behavioral rather than physical and cognitive criteria. Eating disorders can be potentially life-threatening, impactful on every organ system, with prognosis varying widely, with adolescents having greater success in recovery than adults (Hornberger & Lane, 2021).

Treatment principles across eating disorders seek to attain full healthy weight and growth trajectory through nourishment and healthy relationships with food and eating behaviors, body weight, shape and size. Limited research is available on pathology and psychobiology of eating disorders but some previously understood characteristics and incidences have been revised, now recognizing eating disorders exist in all racial and ethnic groups, lower socioeconomic classes, preadolescent children, males and females (Hornberger & Lane, 2021).

Treatment of eating disorders focus on recovery and occur in day facilities-outpatient settings, residential and hospital-based stabilization programs. A small number of treatment programs integrate horticultural therapy or therapeutic horticulture into eating disorder interventions. Program goals involve growing and eating healthy food, adapting disruptive unhealthy eating patterns, nutrition counseling, emotional regulation, and positive leisure activities using plant-based activities.

Recent research on eating disorders has expanded foundational knowledge re symptoms, pathology, emotional regulation components and factors like ethnicity, autism, LGBTQ orientation and food insecurity, these important for developing and delivering health interventions (Prefit et al, 2019; Maguire & Maloney, 2021; Schaumberg et al, 2021; Lopex et al, 2023; Kennedy et al, 2022; Reney et al, 2023; Parker et al, 2022; Keski-Rahkonen et al, 2023). Limited literature on horticultural therapy or therapeutic horticulture programs for this demographic has been published since 2022.

For related resources refer to category: Populations/Horticulture Programs in Specific Settings – Mental Health, Trauma Recovery; category: Horticultural Therapy & Health Services.

Key Organizations

[Eating Disorders Coalition for Research, Policy & Action](#)

[National Eating Disorder Association \(NEDA\)](#)

[The Eating Disorder Foundation](#)

Books, journals & epublications on feeding and eating disorder populations and programs

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders*, 5th ed. American Psychiatric Association Publishing.

[Journal of Eating Disorders](#)

National Eating Disorder Association (2022). [Statistics and research on eating disorders.](#)

Research & articles on feeding and eating disorder populations & programs

Recently published selected research & articles:

Allen, K.L. Byrne, S.M., Hii, H. et al. (2013). Neurocognitive functioning in adolescents with eating disorders: A population-based study. *Cogn Neuropsychiatry*, 18(5), 355-375.

Blackwell, D., Becker, C., Bermudez, O. et al. (2021). The Legacy of Hope Summit: A consensus-based initiative and report on eating disorders in the U.S. and recommendations for the path forward. *J Eat Disord.*, 9(1), 145.

Butterfly Foundation. (2022). [Submission to the Select Committee Inquiry into social media and online safety.](#)

Calzo, J.P., Horton, N.J., Sonnevile, K.R. et al. (2016). Male eating disorder symptom patterns and health correlates from 13 to 26 years of age. *J Am Acad Child Adolesc Psychiatry.*, 55(8), 693-700.

Cipriani, J., Benz, A., Holmgren, A. et al. (2017). A systematic review of the effects of horticultural therapy on persons with mental health conditions. *Occup. Ther. Ment. Health.*, 33, 47–69.

Corazon, S.S., Sidenius, U., Vammen, K.S. et al. (2018). *The Tree Is My Anchor: A pilot study on the treatment of BED through nature-based therapy.* *Int J Environ Res Public Health.*, 15(11), 2486.

Curzio, O., Billeci, L., Belmonti, V. et al. (2022). Horticultural therapy may reduce psychological and physiological stress in adolescents with anorexia nervosa: A Pilot study. *Nutrients*, 7, 14(24), 5198.

Fleming, L. (2015). [Horticultural therapy programs that excite, excel and engage.](#) *Guelph Enabling Garden.*

Fleming, L. (2012). Interview with Dr. Cheryl Aubie, Psychologist, Capital Health Eating Disorder Program. *Digging In*, 2(1), 1-3.

Fleming, L. & Sampson, K. (2022). Feeding and eating disorders and horticultural therapy. *Cultivate*, 2(4), 1-5.

Gallagher, M.W., Long, L.J., Richardson, A. et al. (2019). Examining hope as a transdiagnostic mechanism of change across anxiety disorders and CBT treatment protocols. *Behavior Therapy*, 51(1), 190–202.

Guglielmetti Mugion, R., & Menicucci, E. (2021). Understanding the benefits of horticultural therapy on paediatric patient's well-being during hospitalization. *The TQM Journal*, 33(4), 856-881.

Haith, J., & Trenoweth, S. (2015). Horticulture and ecotherapies: Improving health and wellbeing. *British Journal of Mental Health Nursing*, 4(5).

Hay, P. (2020). Current approach to eating disorders: A clinical update. *Intern Med J.*, 50(1), 24-29.

Haller, R.L., & Kennedy, K.L. (2019). Horticultural therapy, related people-plant programs, and other therapeutic disciplines. In Haller, Kennedy & Capra (Eds.), *The profession and practice of horticultural therapy*. CRC Press.

Hogan, M., & Delaney, M.E. (2019). Ecotherapy interventions. In Delaney *Nature is nurture: Counseling and the natural world*. Tantor and Blackstone Publishing, 181.

Hornberger, L.L., & Lane, M.A., Committee on Adolescence. (2021). Identification and management of eating disorders in children and adolescents. *Pediatrics*, 147(1), e2020040279.

Irish, J. (2019). Program example: Psychiatric, Rogers Memorial Hospital, Oconomowoc, Wisconsin. In Haller, Kramer & Capra (Eds.) *The profession and practice of horticultural therapy*. CRC Press.

- Jowik, K., Tyszkiewicz-Nwafor, M., & Słopień, A. (2021). Anorexia nervosa-What has changed in the state of knowledge about nutritional rehabilitation for patients over the past 10 years? A review of literature. *Nutrients*, 13(11), 3819.
- Juli, L., Juli, R., Juli, G., & Juli, MR. (2021, Sept.). New therapeutic strategies for eating disorders and obesity treatment. *Psychiatr Danub.*, 33(Suppl 9), 84-85.
- Kennedy, H.L., Dinkler, L., Kennedy, M.A. et al. (2022). How genetic analysis may contribute to the understanding of avoidant/restrictive food intake disorder (ARFID). *Journal of Eating Disorders*, 10(1), 53.
- Keski-Rahkonen, A., & Ruusunen, A. (2023). Avoidant-restrictive food intake disorder and autism: Epidemiology, etiology, complications, treatment, and outcome. *Curr Opin Psychiatry*, 36(6), 438-442.
- López-Gil, J. F., García-Hermoso, A., Smith, L. et al. (2023). Global proportion of disordered eating in children and adolescents. *JAMA Pediatrics*.
- Maguire, S., & Maloney, D. (2021). The implementation of large-scale health system reform in identification, access and treatment of eating disorders in Australia. *J Eat Disord.*, 9(1), 121.
- Masheb, RM., Ramsey, CM., Marsh, AG. et al. (2021). DSM-5 eating disorder prevalence, gender differences, and mental health associations in United States military veterans. *Int J Eat Disord.*, 54, 1171– 1180.
- Nagata, J.M., Chu, J., Cervantez, L. et al. (2023). Food insecurity and binge-eating disorder in early adolescence. *International Journal of Eating Disorders*, 56(6), 1233–1239.
- Palvras, MA., Hay, P., Filho, CAS., & Claudino, A. (2017). The efficacy of psychological therapies in reducing weight and binge eating in people with bulimia nervosa and binge eating disorder who are overweight or obese—A critical synthesis and meta-analyses. *Nutrients*, 299.
- Parker, JE., Enders, CK., Mujahid, MS. et al. (2022). Prospective relationships between skin color satisfaction, body satisfaction, and binge eating in Black girls. *Body Image*, 41, 342–353.
- Parker, L.L., & Harriger, J.A. (2020). Eating disorders and disordered eating behaviors in the LGBT population: A review of the literature. *J Eat Disord.*, 8, 51.
- Peterson, CB., Weber, E., & Sim, L. (2024). Optimizing treatment environments for trait sensitivity in eating disorders. *Eating Disorders*, 1-15.
- Prefit, AB., Câdea, DM., & Szentagotai-Tătar, A. (2019). Emotion regulation across eating pathology: A meta-analysis. *Appetite*, 143, 104438.
- Raney, JH., Al-Shoaibi, AA., Shao, IY. et al. (2023). Racial discrimination is associated with binge-eating disorder in early adolescents: A cross-sectional analysis. *Journal of Eating Disorders*, 11(1), 139.
- Robinson-O'Brien, R., Perry, C.L., Wall, M.M. et al. (2009). Adolescent and young adult vegetarianism: Better dietary intake and weight outcomes but increased risk of disordered eating behaviors. *J Am Diet Assoc.*, 109(4), 648-655.
- Schaumberg K., Reilly EE., Gorrell, S. et al. (2021). Conceptualizing eating disorder psychopathology using an anxiety disorders framework: Evidence and implications for exposure-based clinical research. *Clin Psychol Rev.*, 83, 101952.
- Sheridan, DN. (2023). Soil for the starved soul: Reclaiming the roots of desire in the eating-disordered psyche. Pacifica Graduate Institute ProQuest Dissertations Publishing.
- Smith, B.E.R. (2022). [Implementing horticultural therapy in eating disorder recovery](#). National Eating Disorders Association.
- Starling, LA. (2016). Horticultural therapy with special populations. In Waliczek & Zajicek (Eds.), *Urban horticulture*. Routledge, 205.
- Szynal, K., Górski, M., Grajek, M. et al. (2022). Drunkorexia - knowledge review. *Psychiatr Pol.*, 56(5), 1131-1141.

Trangsrud, L.K., Borg, M., & Bratland-Sanda, S. (2020). Friluftsliv (Nordic way of outdoor living) in eating disorder recovery: A systematic review. *Journal of Outdoor Recreation, Education, and Leadership*, 12(2).

Udo, T., & Grilo, C. M. (2018). Prevalence and correlates of DSM-5-defined eating disorders in a nationally representative sample of U.S. adults. *Biological Psychiatry*, 84(5), 345–354.

Examples of feeding and eating disorder populations and plant-based programs

Homewood Health Centre, Guelph Ontario offers specialized programs for mental health challenges including eating disorders. “In planting fruits and vegetables, patients with eating disorders learn about nutrition and also the importance of nurturing their bodies and soul.” Three registered horticultural therapists deliver the Homewood programs. (*Hospital News*, n.d.).

Rogers Behavioral Health, a multi-location health organization, uses horticultural therapy in eating disorder recovery. Dr. Brad Smith comments “horticultural therapy is a natural exposure that can be used to reduce anxiety and fear. If someone has challenges with contamination, they might avoid getting dirty or exposing themselves to germs, bugs, and plants. We use horticultural therapy as part of their exposure hierarchy to have an activity that will continue to challenge them, resulting in fewer obsessions and compulsions.” (2022).

<https://www.youtube.com/watch?v=b9tmUDZ9odc>

Sheppard Pratt Harry Stack Sullivan Day Hospital uses a therapeutic garden and horticultural therapy in treatment of people with eating disorders at its Center for Eating Disorders.

<https://www.sheppardpratt.org/inspire/story/planting-seeds-for-healing/>

The Eating Disorder program, Nova Scotia Health Authority, Halifax, Nova Scotia helps people overcome anorexia nervosa, bulimia nervosa and binge eating disorders. The clinic offers a variety of treatment options through individual therapy, consultation with a dietician, and a series of groups that address concerns associated with eating disorders and delivers a multi-disciplined approach at its out-patient clinic in a hospital setting, focused on improving relationships with food, and adapting behavior through growing and preparing nutritious food, hands-on gardening as positive social and leisure activities, supported by nutritional and psychological guidance from trained mental health professionals. (*Eating Disorder Program | Nova Scotia Mental Health and Addictions*, n.d.)

<https://mha.nshealth.ca/en/services/eating-disorder-program>

Videos, websites & webinars on feeding and eating disorders populations & programs

Fact Sheets in multiple languages on eating disorders from Australia’s Butterfly organization

<https://butterfly.org.au/resources/>

Family-based Treatment (FBT) for eating disorders e-article describes FBT & family therapy and the pros and cons of each.

<https://www.verywellmind.com/what-is-family-based-treatment-fbt-for-eating-disorders-4052371>

Gender, Sexuality & Eating Disorders podcast from Butterfly: Let’s Talk series discuss this health condition among LGBTIQ+ community in Australia mentioning the National LGBTI Health Alliance and its efforts to support recovery.

<https://butterfly.org.au/podcast/lets-talk-gender-sexuality-eating-disorders/>

Project Heal focuses on resources that support financial and insurance challenges for treatment of eating disorders.

<https://www.theprojectheal.org/>

Sensory Processing, Eating Disorders and Feeding Disorders video by 3 occupational therapists from Star Institute discuss connections with sensory processing, process of working with eating challenges, body awareness issues, and physiological inputs related to eating.

<https://www.youtube.com/watch?v=JddkD9DzkWg>

THAD (Therapeutic Horticulture Activity Database) offers TH activities across populations and settings including eating disorders and mental health (activities: field trip to community garden, bruschetta snacks, plant parts & plant parts rap, fring frang Acadian potato dish, exploring renewal and growth, individuals plot gardening at facilities).

<https://hort.ifas.ufl.edu/therapeutic-horticulture-activities-database/>

Related organizations

[Alliance for Eating Disorder Awareness](#)

[Beat Eating Disorders](#) (UK)

[Butterfly Foundation](#) (Australia)

[National Association for Males with Eating Disorders](#) (NAMED)

[National Association of Anorexia Nervosa and Associated Disorders](#)

[The Academy for Eating Disorders](#) (professional association)

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