

CATEGORY: POPULATIONS/HORTICULTURE PROGRAMS

Mental Health Populations and Plant-based Programs

Mental health includes a broad range of wellness and diagnosed conditions. It is impacted and interrelated with societal issues like COVID-19, concern about the earth's ecology, and increasing levels of violence, political strife and destabilizing world events. Within this context, services, strategies and health facilities are seeking to improve people's mental health and wellness, be they diagnosed or undiagnosed conditions.

Horticulture for health activities provide services, health interventions and strategies working with the diverse types of mental health populations and issues. These include programs, gardens, horticultural therapy treatment and recreation interventions, nutrition, and social engagement, each with a plant-based or nature-based theme. Since 2025, there has been a robust body of published research in this area, many of which are included in the FLHHN Resource Hub. These resources are not the definitive list, but will provide an overview of the breadth and range of populations, programs, and gardens.

The approach used for the Florida Horticulture for Health Network's Resource Hub has been to organize the mental health paradigm by three categories - facilities utilizing horticultural therapy with mental health populations; specific mental health treatment areas; and general mental health and wellbeing. Some mental health areas have been compiled separately in the Resource Hub because of the amount of available information - [feeding/eating disorders](#), trauma recovery, [dementia](#) (combined with senior populations), and [autism spectrum disorder](#). The following is a short summary of research for the three areas, with a bibliography of selected citations for each category in the body of this document:

General mental health and wellbeing: There is significant number of studies on exposure to nature and the benefits it provides for maintaining positive mental health and wellbeing. Gardening, horticultural therapy programming, and social prescribing are identified in the literature as preventative, stabilizing interventions contributing to strong mental health. Two health areas with increasing attention within this general category of mental health wellness have investigated correlations of plant-based programming to depression and ecowellness in youth.

Specific diagnosed mental health areas: Research on specific diagnosed mental health conditions of schizophrenia, psychotic disorders, depression, substance abuse treatment, neurological disorders, and stress-related mental health disorders, and the efficacy of horticultural therapy have been investigated. Studies also examined functioning of people with mental health diagnoses when participating in horticultural therapy. A newer term—agro-healing horticultural interventions—has been mentioned in the literature.

Facilities: Diverse types of facilities providing services to mental health populations use gardens, as well as green spaces and community gardens, some delivering horticultural therapy or other plant-based activity or interventions. Green spaces were identified at treatment centers (gardens), community centers, psychiatric inpatient unit, college campuses, patient room mockup at a VA facility, women's shelter, NICU, and residential greenness in neighborhoods in the context of impacts on mental health. Green spaces as tools for mental health recovery, as Tanigaiselvane stated, is a

convergence of landscape architecture, environmental psychology, and public policy (2025). Research suggests the green environment can impact general mental health, and individuals with mental health diagnoses.

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

Key Organizations

[Mental Health America](#)

[Mental Health Association of Central Florida](#)

[The Center for Urban Design and Mental Health](#)

Books, journals & epublications on mental health and plant-based programs

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

Datsiuk, I., & Senyk, O. (2025). *Testing the efficacy of horticultural therapy in conditions of continuous war-related stress: Comparison of the randomized and pretest-posttest experimental designs*. SAGE Publications Ltd.

Haller, R., & Capra, CL. (2025). *Horticultural therapy methods*, third edition. CRC Press.

Haller, R., Kramer, K., & Capra, K. (Eds.) (2019). *The profession and practice of horticultural therapy*. CRC Press.

[Journal of Urban Design and Mental Health](#)

Nath, S. (2025). *Healing the broken circle: Moving mental health care beyond Western walls for Indigenous veterans*. SAGE Publications.

McGreeney, A. (2016). *With nature in mind: The ecotherapy manual for mental health professionals*.

Mate, G., & Mate, D. (2022). *The myth of normal, trauma, illness and healing in a toxic culture*. Alfred A. Knopf Canada.

Research & articles on mental health and plant-based programs

Recently published selected research & articles:

Mental Health & Wellbeing

Abbott A. (2021). COVID's mental-health toll: Scientists track surge in depression. *Nature* 590.

Ainamani, HE., Gumisiriza, N., Bamwerinde, WM., & Rukundo, GZ. (2022). Gardening activity and its relationship to mental health: Understudied and untapped in low-and middle-income countries.

Preventive Medicine Reports, 29.

Anderson Walker, SB., & Stowell, D. (2024). Seeds of Wellness: A pilot study of horticultural therapy and nature-based expressive arts to support holistic wellness for adults. *Journal of Creativity in Mental Health*.

Armstrong, A., Nolan, C., Cremin, K. et al. (2023). The relationship between horticulture, recovery and occupational therapy in mental health: A scoping review. *Occupational Therapy in Mental Health*.

Bahamonde, A. (2019). Mental health through the art of gardening. *Journal of Therapeutic Horticulture* 29(2).

Barnes, MR., Donahue, ML., Keeler, BL. Et al. (2019). Characterizing nature and participant experience in studies of nature exposure for positive mental health: An integrative review. *Front. Psychol.*, 9.

Bedolla, V. (2025). A horticultural approach to emerging first-generation college students' mental health. Thesis: *California State University, Long Beach*.

- Brandt, L., De Prisco, M., Nocera, D. et al. (2026). Climate-related and nature-based interventions for mental health: An umbrella review and meta-analysis. *JAMA Psychiatry*.
- Bratman, GN., Mehta, A., Olvera Alvarez, HA. et al (2024). Associations of nature contact with emotional ill-being and well-being: The role of emotion regulation. *Cognition and Emotion*.
- Bratman, GN., Anderson, CB., Berman, MG. et al. (2019). Nature and mental health: An ecosystem service perspective. *Science Advances*, 5.
- Briggs, R., Morris, PG., & Rees, K. (2023, Aug.). The effectiveness of group-based gardening interventions for improving wellbeing and reducing symptoms of mental ill-health in adults: A systematic review and meta-analysis. *J Ment Health.*, 32(4).
- Chavaly, D., & Naachimuthu, KP. (2020). Human-nature connection and mental health: What do we know so far? *Indian Journal of Health and Wellbeing*, 11(1).
- Coventry, PA., Brown, J., Pervin, J. et al. (2021). Nature-based outdoor activities for mental and physical health: Systematic review and meta-analysis. *SSM - Population Health*, 16.
- Darcy, PM., Armit, H., Hurd, A. et al. (2025). Green social prescribing: A before and after evaluation of a novel community-based intervention for adults experiencing mental health problems. *Health & Social Care in the Community*, 2025(1).
- Diehl, RM., Diehl, DC., & Tham SY. (2025). The effects of therapeutic horticulture on student well-being and academic resilience. *Frontiers. Psychol.*, 16.
- Fadel, M., Roquelaure, Y., & Descatha, A. (2023). Interventions on well-being, occupational health, and aging of healthcare workers: A scoping review of systematic reviews. *Safety and Health at Work*, 14(1).
- Ferraro, J. (2025). [Pathway to food security: Garden therapy for mental illness](#). *Integrative Medicine*, 24(2).
- Fleming, L., Bethel, M., & Roberts, T. (2023). Self-regulation, its neuroscience foundations and horticultural therapy: Growing the connections. *Journal of Therapeutic Horticulture*, 31(1).
- Furuyashiki, A., Tabuchi, K., Norikoshi, K., et al. (2019). A comparative study of the physiological and psychological effects of forest bathing (Shinrin-yoku) on working age people with and without depressive tendencies. *Environmental Health and Preventive Medicine*, 24.
- Gangamma, R., Walia, B., Minkoff-Zern, LA., & Tor, S. (2024). Role of gardening in mental health, food security, and economic well-being in resettled refugees: A mixed methods study. *Journal on Migration and Human Security*, 12(1).
- Gao, SY., Ng, SM., & Wan, EHY. (2025). Evaluation of horticultural therapy for enhancing women's well-being: A randomized waitlist-controlled trial. *Research on Social Work Practice*, 35(4).
- Griffin, L., Petsou, A., Hynes, R., & Moore, G. (2025). Debate: Urban versus rural environments - which is better for mental health? Beyond the urban and rural dichotomy, a call to consider quality, typology and space in greenspace strategies for mental health. *Child Adolesc Ment Health.*, 30(2).
- Gudmundsson, M., Palsdottir, AM., Bejerholm, U., & Argentzell, E. (2025). Outcomes on health, recovery and activity level for mental health service users attending a novel nature-based intervention: A prospective study. *Nordic Journal of Psychiatry*, 79(3).
- Gungormus, DB., & Pérez-Mármol, JM. (2025). Participating in tree planting improves mood, reduces stress, and alleviates anxiety. *Ecopsychology*.
- Guo, L., Xu, W., Shi, Y. et al. (2024). Which horticultural activities are more effective for children's recovery from stress and mental fatigue? A quasi-experimental study. *Front Psychol.*, 15.
- Hart, B., & Zanskas, S. (2021). Cultivating care: Trauma, homeless veterans, and nature-based therapy. *Journal of Therapeutic Horticulture*, 31(1).

- Haghighatdoost, F., Mahdavi, A., Mohammadifard, N. et al. (2023). The relationship between a plant-based diet and mental health: Evidence from a cross-sectional multicentric community trial (LIPOKAP study). *PLoS One*, 18(5).
- He, F., Li, X., Xu, X. et al. (2025). Can working in agriculture have a favorable effect on depressive symptoms? Life satisfaction as a mediator. *Plos one*, 20(8).
- Jueng, RN., Lin, CY., & Huang, YH. (2023). Systematic review on the positive mental health impact of older adults' participation in horticultural activities in long term care facilities. *Horticulturae*, 9(10).
- Kang, M., Yang, Y., Kim, H. et al. (2023). The mechanisms of nature-based therapy on depression, anxiety, stress, and life satisfaction: Examining mindfulness in a two-wave mediation model. *Front Psychol.*, 14.
- Kasaraneni, S. (2025). A qualitative study to explore the role of olfactory stimulant plants in modulating IL-6 in post-traumatic stress disorder (PTSD) and traumatic brain injury (TBI).
- Kim, G., Kang, S., Paek, K. et al. (2025, March). Analysis of program activities to develop forest therapy programs for improving mental health: Focusing on cases in Republic of Korea. *Healthcare*, 13(7).
- Kim, JM., Park, SY., Jeon, MG. et al. (2024). Perceptions and mental health effects of therapeutic farming across age groups: A survey-based study. *HortTechnology*, 34(6).
- Kondaguli, SV., Varghese, A., Rai, A., & Navalkar, A. (2023). Gardening as a therapeutic tool for healing mental health issues among terminally ill patients: An opinion review. *International Journal of Health Sciences and Research* 13(12).
- Kristjansdottir, HL., Sigurdardottir, S., & Palsdottir, AM. (2021). The participant's experience of performing horticulture activities in vocational rehabilitation. *ISHS Acta Horticulturae 1330: XV International People Plant Symposium and II International Symposium on Horticultural Therapies: The Role of Horticulture in Human Well-being and Social Development*.
- Lasater, CA. (2022). A systematic review of studies evaluating the effectiveness of horticultural therapy for increasing well-being and decreasing anxiety and depression. *Digital Commons @ ACU, Electronic Theses and Dissertations. Paper 470*.
- Lewis, O., Ohrt, J., Toomey, TM. et al. (2022). A systematic review of nature-based counseling interventions to promote mental health and wellness. *Journal of Mental Health Counseling*, 44(3).
- Li, H., Xue, T., Zhang, A. et al. (2025). [Impact of urban and cultural landscape heritage on mental health: a systematic review and meta-synthesis](#). *BMC Public Health*, 25(1).
- Loftus, EI., Lachaud, J., Hwang, SW., & Mejia-Lancheros, C. (2021). Food insecurity and mental health outcomes among homeless adults: A scoping review. *Public Health Nutr.*, 24(7).
- Lorimer, J., Menon, S., Polgreen, K. et al. (2025). A scoping review of nature-based programmes in schools for mental health and wellbeing in young people. *Oxford University Research Archive*.
- Lunde Fjaestad, S., Mackelprang, JL., Sugiyama, T., & Kongsley, J. (2023). Mental health outcomes associated with gardening: A scoping review. In Marsh & Williams (Eds.), *Cultivated therapeutic landscapes*. Routledge.
- Mariani, R., Renzi, A., Di Monte, C. et al. (2021). The impact of the COVID-19 pandemic on primary emotional systems and emotional regulation. *Int J Environ Res Public Health.*, 18(11).
- McCormick, R. (2017). Does access to green space impact the mental well-being of children: A systematic review. *Journal of Pediatric Nursing*, 37.
- Menhas, R., Yang, L., Saqib, ZA. et al. (2024). Does nature-based social prescription improve mental health outcomes? A systematic review and meta-analysis. *Front Public Health.*, 12.

- Meore, A., Sun, S., Byma, L. et al. (2021). Pilot evaluation of horticultural therapy in improving overall wellness in veterans with history of suicidality. *Complementary Therapies in Medicine*, 59.
- Millican, J., Perkins, C., & Adam-Bradford, A. (2019). Gardening in displacement: The benefits of cultivating in crisis. *Journal of Refugee Studies*, 32(3).
- Murtola, AM., & Vallely, N. (2023). Who cares for wellbeing? Corporate wellness, social reproduction and the essential worker. *Organization*, 30(3).
- Nguyen, PY., Astell-Burt, T., Rahimi-Ardabili, H., & Feng, X. (2023). Effect of nature prescriptions on cardiometabolic and mental health, and physical activity: A systematic review. *The Lancet Planetary Health*, 7(4).
- Pancras, S., Ravi, RV., & Seerangan, C. (2025). Social farming in India: A therapeutic and economic solution for mental health and agrarian distress. *International Journal of Research in Management*, 14(1).
- Park, SA. (2020). Indoor green plants are beneficial to mental health. *AHTA Magazine*, 48(3).
- Peacock-Brennan, S., & McShea, Z. (2024). The Growing Group: A service evaluation of community horticultural therapy for adults with a learning disability and mental health difficulties. *FPID Bulletin: The Bulletin of the Faculty for People with Intellectual Disabilities*, 22(2).
- Polit, M., Friso, F., & Mabit, J. (2019). Plant based assisted therapy for the treatment of substance use disorders part 2: Beyond blurred boundaries. *Cultura y Droga*, 24(28).
- Pourmotabbed, A., Moradi, S., Babaei, A. et al. (2020). Food insecurity and mental health: A systematic review and meta-analysis. *Public Health Nutr.*
- Preuß, M., Nieuwenhuijsen, M., Marquez, S. et al. (2019). Low childhood nature exposure is associated with worse mental health in adulthood. *International Journal of Environmental Research and Public Health*, 16(10).
- Psychology Tools. (2024). [Psychological assessment tools for mental health](#): [Anger, anxiety, self-esteem, psychosis, personality disorders, OCD, bipolar, addictions among others].
- Relf, J., Chan, D., Jones, D. et al. (2020). Effects of a workplace wellness program on employee health, health beliefs, and medical use: A randomized clinical trial. *JAMA Internal Medicine*, 180(7).
- Rosa, CD., Chaves, TS., Collado, S. et al. (2023). Horticultural interventions may reduce adults' depressive symptoms: A systematic review of randomized controlled trials. *Journal of Environmental Psychology*, 102112.
- Shapiro, BA., & Kaplan, MJ. (2024). Mental illness and horticultural therapy practice. In *Horticulture as therapy* (pp. 157-197). CRC Press.
- South, E., Holh, B., Kondo, MC. et al. (2018). [Effect of greening vacant land on mental health of community-dwelling adults.](#) *JAMA Network Open*, 1(3).
- Spano, G., D'Este, M., Giannico, V. et al. (2020). Are community gardening and horticultural interventions beneficial for psychosocial well-being? A meta-analysis. *International Journal of Environmental Research and Public Health*, 17 (10).
- Theodoron, A., Panno, A., Carrus., G. et al. (2021). Stay home, stay safe, stay green: The role of gardening activities on mental health during the COVID-19 home confinement. *Urban Forestry & Urban Greening* 61.
- Thomson, LJ., Morse, N., Elsdon, E., & Chatterjee, HJ. (2020). Art, nature and mental health: Assessing the biopsychosocial effects of a 'creative green prescription' museum programme involving horticulture, artmaking and collections. *Perspectives in Public Health*, 140(5).
- Tseng, TA., Chang, J., & Chang, YC. (2023). Green experience: The effect of horticultural activities on children's physical and mental health and dietary behavior. *HortScience*, 58(6).

- Tu, HM. (2022). Effect of horticultural therapy on mental health: A meta-analysis of randomized controlled trials. *Journal of Psychiatric and Mental Health Nursing*.
- Vashishta, A., Ojha, R., & Sood, Y. (2025). Gardening for the mind: Exploring the mental health benefits of horticultural therapy. *Plant Archives*, 25(1).
- Verma, A., Ansari, Z., Rahman, M. et al. (2026). Flowers in mental health: From anxiolytics to antidepressants. In *Exploring medicinal and commercial uses of flowers* (pp. 283-302). CRC Press.
- Vigano, C., Balducci, A., & Prosdomici Gianquinto, G. (2023). Horticultural therapy and mental health recovery post Covid outbreak. In *Envisioning resilient cities. Post pandemic one health future* (pp. 169-176). ResilientLAB.
- Wang, EZQ., Jones, HM., Carus, A. et al. (2025). Ecotherapy for adolescents experiencing mental health challenges: Qualitative exploration of perspectives of adolescents and parents. *Journal of Creativity in Mental Health*, 20(3).
- Watkins, M., The, LA., & Fernandez, KTG. (2019). Exploring the use of therapeutic horticulture to enhance the psychological well-being of female survivors of childhood sexual abuse. *Journal of Therapeutic Horticulture*, 29(1).
- Whiteley, H., Lynch, M., Hartfiel, N. et al. (2025). [Health economics-informed social return on investment \(SROI\) analysis of a nature-based social prescribing craft and horticulture programme for mental health and well-being](#). *International Journal of Environmental Research and Public Health*, 22(8).
- Wood, CJ., Barton, J., & Wicks, C. (2025). Effectiveness of social and therapeutic horticulture for reducing symptoms of depression and anxiety: A systematic review and meta-analysis. *Frontiers in Psychiatry*, 15.
- Wood, CJ., Morton, G., Rossiter, K. et al. (2024). A qualitative study of the barriers to commissioning social and therapeutic horticulture in mental health care. *BMC Public Health*, 24(1).
- Wortzel, JD. (2025). Nature nurtures: Evaluating the impact of nature-based therapies on pediatric mental health. *Journal of the American Academy of Child & Adolescent Psychiatry*, 64(10).
- Wu, YC., & Chang, CY. (2021). The impact of landscape plant fragrance on emotion and brain responses. *Acta Hort.* 1313.
- Yang, Y., Ro, E., Lee, T-J. et al. (2022). The multi-sites trial on the effects of therapeutic gardening on mental health and well-being. *International Journal of Environmental Research and Public Health*, 19(13).
- Yu, Y. (2025, October). Emotion change analysis and clustering of horticultural therapy participants based on K-means algorithm. In *Proceedings of the 2025 International Conference on Artificial Intelligence, Virtual Reality and Interaction Design* (pp. 252-259).
- Yun, J., Yao, W., Meng, T., & Mu, Z. (2023, Jun). Effects of horticultural therapy on health in the elderly: A review and meta-analysis. *Z Gesundh Wiss*.
- Zhang, X., Zhang, Y., & Zhai, J. (2021). Home garden with eco-healing functions benefiting mental health and biodiversity during and after the COVID-19 pandemic: A scoping review. *Frontiers in Public Health*, 9.
- Zhong, YQ., & Tu, HM. (2020). Horticultural activity type, psychological well-being, and fruit and vegetable intake. *Nutrients*, 12(11).

Mental Illness

- Ascencio, J. (2019). Horticultural therapy as an intervention for schizophrenia: A review. *Alternative and Complementary Therapies*, 25(4).

- Atta, MHR., Salama, EA., & Menessy, RFM. (2025). Effect of horticultural therapy program on psychological wellbeing, hope and social adjustment among patients with psychotic disorders: A nursing perspective. *Journal of Psychiatric and Mental Health Nursing*.
- Beccia, F., Grassi, F., Marziali, E. et al. (2024). Integrated models for concurrent disorders from a public mental health lens: A systematic review. *European Journal of Public Health*, 34(Supplement_3).
- Borella, E., Melendugno, A., Meneghetti, C. et al. (2023). Effects of an outdoor horticultural activities program on cognitive and behavioral functioning, mood, and perceived quality of life in people with dementia: A pilot study. *Frontiers in Psychology*, 14.
- Burrell, MW., Barton, J., Reinhardt, GY., & Wood, CJ. (2025). Psychological, psychosocial and physical barriers preventing nature-based intervention participation in adults with mental health disorders: A scoping review. *Journal of Health Psychology*, 30(8).
- Chen, L., Sun, Y., Pan, Y. et al. (2025). How duration and frequency influence horticultural therapy's effect on depressive symptoms: evidence from a meta-analysis. *Front Psychol*.
- Chen, Y., Soontornchai, S., Thongmuang, P. et al. (2025). Efficacy of repetitive transcranial magnetic stimulation combined with horticultural therapy for post-stroke depression: A randomized controlled trial. *Eurasian Journal of Medicine and Oncology*, 9(2).
- Chen, H. (2021). The effect of horticultural therapy in depression intervention. *Journal of Landscape Research*, 13(6).
- Christie, M., Cole, F., & Miller, P.K. (2020). A piloted think aloud method within an investigation of the impacts of a therapeutic green exercise project for people recovering from mental ill-health: Reflections on ethnographic utility. *Journal of Therapeutic Horticulture*, 30(1).
- Corazon, SS., Nyed, PK., Sidenius, U. et al. (2018). A long-term follow-up of the efficacy of nature-based therapy for adults suffering from stress-related illnesses on levels of healthcare consumption and sick-leave absence: A randomized controlled trial. *Int J Environ Res Public Health*, 15(1).
- Curzio, O., Billeci, L., Belmonti, V. et al. (2022, Dec.). Horticultural therapy may reduce psychological and physiological stress in adolescents with anorexia nervosa: A pilot study. *Nutrients*, 7(24).
- Cuthbert, S., Kellas, A., & Page, LA. (2021). Green care in psychiatry. *Br. J. Psychiatry*, 218.
- Díaz-Martínez, F., Sánchez-Sauco, MF., Cabrera-Rivera, LT. et al. (2024). Harnessing the healing power of nature: A review of natural interventions in substance abuse treatment and prevention. *Environmental Health and Preventive Medicine*, 29.
- Fikas, K., Chwaliszewski, K., Waz, D. et al. (2025). Exploring the therapeutic role of physical activity in psychotic disorders: Cognitive, somatic, and mental health impacts. *Quality in Sport*, 37.
- Gong, Y., Yan, Y., Shen, H., & Zhu, X. (2026). The role of horticultural therapy in the clinical rehabilitation of patients with depression: A scoping review. *Journal of International Medical Research*, 54(2).
- Han, AR., Park, SA., & Ahn, BE. (2018). Reduced stress and improved physical functional ability in elderly with mental health problems following a horticultural therapy program. *Complement Ther Med*, 38.
- He, H., Yu, Y., Li, J. et al. (2020). Edible horticultural therapy for the rehabilitation of long-term hospitalized female schizophrenic patients. *HortScience*, 55(5).
- Henderson, C., Kotera, Y., Lloyd-Evans, B. et al. (2026). Social inclusion of people with severe mental illness: A review of current practices, evidence and unmet needs, and future directions. *World Psychiatry*, 25(1).
- Hikmat, R., Suryani, S., Yosep, I. et al. (2025). Community-based recovery interventions for improving mental health in schizophrenia patients: A scoping review in Southeast Asia. *BMC Psychiatry*, 25(1).

- Iosim, I., Marin Cornelia, D., Cosmin, S., & Dumitrescu, C.S. (2025). Solutions for social agriculture: Horticultural therapy. In *Proceedings/V international scientific conference sustainable agriculture and rural development* (pp. 719-727).
- Johansson, C., Fridén, J., & Hedman Ahlström, B. (2025). Nature's touch: The experience of using nature for health improvements in patients with mental illness. A qualitative study. *Issues in Mental Health Nursing*, 46(2).
- Hikmat, R., Suryani, S., Yosep, I. et al. (2025). Community-based recovery interventions for improving mental health in schizophrenia patients: A scoping review in Southeast Asia. *BMC Psychiatry*, 25(1).
- Joubert, A., Jankowski-Cherrier, B., Rossi, A. et al. (2024). Impact of horticultural therapy on patients admitted to psychiatric wards, a randomised, controlled and open trial. *Sci Rep.*, 14(1).
- Kasaraneni, S. (2025). [A qualitative study to explore the role of olfactory stimulant plants in modulating IL-6 in Post-Traumatic Stress Disorder \(PTSD\) and Traumatic Brain Injury \(TBI\)](#). *The National High School Journal of Science*.
- Kenmochi, T., Kenmochi, A., & Hoshiyama, M. (2019). The effects of horticultural therapy on symptoms and future perspective of patients with schizophrenia in the chronic stage. *Journal of Therapeutic Horticulture*, 29(1).
- Kim, D., Park, E., Yun, H. et al. (2025). Qualitative evaluation of a garden-based healing and learning program for young adults with intellectual disabilities. *International Journal of Environmental Research and Public Health*, 22(2).
- Kim, R., Yang, S., Lee, CH., & Park, SA. (2025). Horticultural activity in soil inoculated with *Streptomyces rimosus* improved depressive mood with altered electroencephalogram and serum metabolism in adults. *Sci Rep.*, 15(1).
- Kim, HH., Choi, BS., & Sung, JE. (2022). Effects of a horticultural therapy program for patients with mental illness. *Journal of Korean Academy of Psychiatric and Mental Health Nursing*, 31(2).
- Kontos, K., Koutsou, S., Sismanidi, A. et al. (2021). The effects of horticultural therapy on the functionality of psychotic patients employed in the green unit of the psychiatric hospital of Thessaloniki Greece. *European Psychiatry*, 64(S1).
- Kovaleski, C., Ahmed, N., Huckle, C., & Bashford, J. (2025). A systematic review of nature-based interventions for neurological disorders. *MedRxiv*.
- Kuhr, A. (2025). Prospects of the Good Lives Model: An exploration of its applicability in guiding therapeutic recreation services in forensic psychiatry. Thesis: *Brock University Digital Repository*.
- Kuo, YZ., Yu, ZS., Li, YZ. et al. (2025). Efficacy of horticultural therapy on symptoms and functional outcomes in individuals with depressive disorders: A systematic review and meta-analysis of randomized controlled trials. *Complement Ther Med.*, 93.
- Korah, T., Morrison, D., Mason, D. et al. (2021). Therapeutic horticulture as a therapeutic intervention in patients receiving electroconvulsive therapy (ECT) treatment for major depressive disorder. *Cureus*, 13(8).
- Kusumawaty, I., & Yunike, P. (2020). The complexity of caring for people with mental disorders: Family challenges in contributing to horticultural therapy. *Pakistan J Med Heal Sci.*, 14.
- LaRoque, C. (2019). Program example: The interface between horticultural therapy trauma treatment and somatic-oriented mental health therapy. In Haller, Kennedy & Capra (Eds.) *The profession and practice of horticultural therapy* (132-133). CRC Press.
- Lee, SM., Song, EJ., Jeong, SJ., & Moon, J. (2026, January). Effects of an agro-healing horticultural intervention on stress, self-esteem, and PANSS scores in inpatients with schizophrenia: A quasi-experimental study. *Healthcare*, 14(1).

- Lee, YW., Chen, TT., Hsu, CW. Et al. (2024, October). Efficacy of horticultural therapy on positive, negative, and affective symptoms in individuals with schizophrenia: A systematic review and meta-analysis of randomized controlled trials. *Healthcare*, 12(21).
- Liu, T., Li, M., Ji, Q. et al. (2022). Value of edible horticultural therapy for schizophrenic. *Food Science and Technology*, 42.
- Lu, S., Zhao, Y., Liu, J. et al. (2021). Effectiveness of horticultural therapy in people with schizophrenia: A systematic review and meta-analysis. *Int J Environ Res Public Health.*, 18(3).
- Maeong, HJ., Gang, M., & Oh, HJ. (2019). The effects of five sensory horticulture therapy on perceived stress and heart rate variability in adults with depression. *Journal of the Korea Convergence Society*, 10(12).
- Martins, R., de Sousa, S., Viana, J. et al. (2026). The impact of virtual reality-based forest therapy in psychiatric inpatient care: A pilot study. *Advances in Mental Health*.
- Meore, A., Sun, S., Byma, L. et al. (2021). Pilot evaluation of horticultural therapy in improving overall wellness in veterans with history of suicidality. *Complementary Therapies in Medicine*, 59.
- Mourão, I., Mouro, CV., Brito, LM. et al. (2022). Impacts of therapeutic horticulture on happiness and loneliness in institutionalized clients with mental health conditions. *British Journal of Occupational Therapy*, 85(2).
- Najjar, AH., Foroozandeh, E., & Gharneh, AAH. (2018). Horticulture therapy effects on memory and psycho-logical symptoms of depressed male outpatients. *Iranian Rehabilitation Journal*, 16(2).
- Natividad, M., Chávez, ME., Balagué, A. et al. (2025). [Community therapeutic space for women with schizophrenia: A new innovative approach for health and social recovery](#). *Women*, 5(2).
- Oh, YA., Park, SA., & Ahn, BE. (2018). Assessment of the psychopathological effects of a horticultural therapy program in patients with schizophrenia. *Complement Ther Med.*, 36.
- Ohta, S., & Moriguchi, T. (2025). Assessing the performance of individuals with intellectual and mental disorders using three orchard tasks of varying difficulty levels. *The Horticulture Journal*, 94(2).
- Oliván-Blázquez, B., Aguilar-Latorre, A. et al. (2021). The relationship between adherence to the Mediterranean diet, intake of specific foods and depression in an adult population (45-75 Years) in primary health care. A cross-sectional descriptive study. *Nutrients*, 13(8).
- Pálsdóttir, AM. (2026). Evidence-based design and a salutogenic approach in nature-based rehabilitation (NBR) for individuals with stress-related mental health disorders. *Ecotherapy: Theory, research, practice & education*.
- Pancani, PCT., Hartono, D., Giandah, SP. et al. (2025). Empowering people with mental disorders through mushroom home kits: A social entrepreneurship approach for economic independence. *International Journal Scientific and Professional*, 4(1).
- Peacock-Brennan, S., & McShea, Z. (2024). The Growing Group: A service evaluation of community horticultural therapy for adults with a learning disability and mental health difficulties. *FPID Bulletin: The Bulletin of the Faculty for People with Intellectual Disabilities*, 22(2).
- Picton, C., Fernandez, R., Moxham, L., & Patterson, CF. (2020). Experiences of outdoor nature-based therapeutic recreation programs for persons with a mental illness: A qualitative systematic review. *JBI Evidence Synthesis*, 18(9).
- Polit, M., Friso, F., & Mabit, J. (2019). Plant based assisted therapy for the treatment of substance use disorders part 2: Beyond blurred boundaries. *Cultura y Droga*, 24(28).
- Rosa, CD., Chaves, TS., Collado, S. et al. (2023). Horticultural interventions may reduce adults' depressive symptoms: A systematic review of randomized controlled trials. *Journal of Environmental Psychology*, 102112.

- Rostami, R., Kalantari, A., Niknejad, R. et al. (2025). The effects of a horticultural activities training program on anxiety, stress, and depression in patients with psychiatric disorders. *Education and Ethics In Nursing* ISSN: 2322-5300.
- Salemi, MH., Foroozandeh, E., & Asadi-Gharneh, HA. (2023). Effectiveness of horticultural therapy on improving memory, alexithymia, and severity of symptoms in patients with persistent depressive disorder. *KMAN Counseling & Psychology Nexus*, 1(1).
- Shirazi, A., Brody, AL., Soltani, M., & Lang, AJ. (2025). Recovery horizons: Nature-based activities as adjunctive treatments for co-occurring post-traumatic stress disorder and substance use disorders. *American Journal of Lifestyle Medicine*, 19(4).
- Siu, AMH., & Lau, BWM. (2024). Evaluation of a horticultural therapy program for care home residents with mental illness. *Journal of Therapeutic Horticulture*, 34(1).
- Siu, AMH., Kam, M., & Mok, I. (2020). Horticultural therapy program for people with mental illness: A mixed-method evaluation. *Int J Environ Res Public Health*, 17(3).
- Slagle, T. (2019). Program example: Neuro sequential approach to horticultural therapy. In Haller, Kennedy & Capra (Eds.) *The profession and practice of horticultural therapy* (pp. 136-137). CRC Press.
- Son, HJ., & Park, SA. (2025). The impact of an agro-healing program on family resilience, parental stress, and social skills of children with developmental disabilities. *Heliyon*, 11(4).
- Stigsdotter, UK. et al. (2018). Efficacy of nature-based therapy for individuals with stress-related illnesses. Randomised controlled trial. *Br. J. Psychiatry*, 213.
- Subagyo, W., & Wahyuningsih, D. (2024). The effect of horticultural therapy on increased self-esteem for mental disorders in the community. *IJUM Medical Journal Malaysia*, 23(01).
- Sushanthigha, MG., & Sundareswaran, D. (2025). Therapeutic horticulture in occupational therapy among people with mental illnesses. *TPM—Testing, Psychometrics, Methodology in Applied Psychology*, 32.
- Tan, GX., Hartanto, A., Eun, ZK. Et al. (2025). Effectiveness of cognitive and behavioral interventions in the treatment of schizophrenia: An umbrella review of meta-analyses. *Journal of Clinical Medicine*, 15(1).
- Tate, C., Hashmi, SM., O'Kane, N., & Hunter, RF. (2026). A systematic review of horticultural therapy and urban agriculture interventions targeting depression, anxiety, and acute stress disorder. *Cities*, 169.
- Thomas, T., Aggar, C., Baker, J. et al. (2022). Social prescribing of nature therapy for adults with mental illness living in the community: A scoping review of peer-reviewed international evidence. *Front Psychol.*, 13.
- Triguero-Mas, M., Anguelovski, I., Cirac-Claveras, J. et al. (2020). Quality of life benefits of urban rooftop gardening for people with intellectual disabilities or mental health disorders. *Prev Chronic Dis.*, 17.
- Whitaker Smith, M., & Lindsay, H. (2022). [Addressing mental health challenges using horticulture-focused programs](#). [Video]. YouTube.
- Wood, CJ., Barton, J., & Wicks, CL. (2025). Effectiveness of social and therapeutic horticulture for reducing symptoms of depression and anxiety: A systematic review and meta-analysis. *Frontiers in Psychiatry*, 15.
- Wood, CJ., Morton, G., Rossiter, K. et al. (2024). A qualitative study of the barriers to commissioning social and therapeutic horticulture in mental health care. *BMC Public Health*, 24(1).
- Wood, CJ., Polley, M., Barton, JL. et al. (2022). Therapeutic community gardening as a green social prescription for mental ill-health: Impact, barriers, and facilitators from the perspective of multiple stakeholders. *Int J Environ Res Public Health*, 19(20).

- Xu, M., Lu, S., Liu, J., & Xu, F. (2023). Effectiveness of horticultural therapy in aged people with depression: A systematic review and meta-analysis. *Frontiers in Public Health*, 11.
- Zamora-Moncayo, EC., Herreram B., Larrieta, J. et al. (2024). A participatory evaluation of an urban garden project in Ecuador: Exploring factors that impact the recovery of people with severe mental health problems. *Qual Health Res.*, 34(14).
- Zhang, W., Yan, J., Qiu, Q. et al. (2025). Horticultural therapy combined with intradermal needling for patients with generalized anxiety disorder of liver depression transforming into fire syndrome under transcranial magnetic stimulation and psychological therapy: Clinical observation of 60 cases. *Journal of Traditional Chinese Medicine*.

Facilities

- Abigail, C., Srinaga, F., & Dewi, J. (2025). Youth-friendly city: Community center as a recovery place for youth depression. *International Journal of Architecture and Urbanism*, 9(3).
- Backus, EW. (2019). Technique: Safety considerations in a mental health setting. In Haller, Kramer and Capra (Eds.) *The profession and practice of horticultural therapy*. CRC Press.
- Baddeley, C. (2025). Horticulture and healing: The gardens at Kenmore. *Australian Garden History*, 36(4).
- Baik, H., Choi, S., An, M. et al. (2024, April). Effect of therapeutic gardening program in urban gardens on the mental health of children and their caregivers with atopic dermatitis. *Healthcare*, 12(9).
- Barnes, MR., Donahue, ML., Keeler, BL. et al. (2019). Characterizing nature and participant experience in studies of nature exposure for positive mental health: An integrative review. *Front. Psychol.*, 9.
- Baur, J. (2020). Campus community gardens and student health: A case study of a campus garden and student well-being. *J. Am. Coll. Heal.*, 70.
- Beh, JH., Yew, MK., Tan, KH., & Rayner, JP. (2025). Critical therapeutic landscape design elements for cognitive impairments in the Royal Talbot Rehabilitation Centre. *Archnet-IJAR: International Journal of Architectural Research*, 19(3).
- Bergeman, J. (2014). Rosencrance Healing Garden, Griffin Williamson Adolescent Treatment Center, Rockford, Illinois. In Cooper Marcus & Sachs (Eds.) *Therapeutic landscapes an evidence-based approach to designing healing gardens and restorative outdoor spaces* (pp.189-194). Wiley.
- Blakeslee, SB., Koch, AK., Schröter, M. et al. (2026). Effects of greenspace interventions on mental disorders-A systematic review and meta-analysis. *Journal of Environmental Psychology*.
- Chen, K., Zhang, T., Liu, F., et al. (2021). How does urban green space impact residents' mental health: A literature review of mediators. *International Journal of Environmental Research and Public Health*, 18.
- Cooper Marcus, C., & Sachs, NA. (2014). Chapter 12 Gardens for mental and behavioural health Facilities. In Cooper Marcus & Sachs (Eds.), *Therapeutic landscapes an evidence-based approach to designing healing gardens and restorative outdoor spaces* (pp.179-205). Wiley.
- Cooper Marcus, C., & Sachs, N.A. (2014). Alnarp Rehabilitation Garden, Alnarp, Sweden. In Cooper Marcus & Sachs (Eds.), *Therapeutic landscapes an evidence-based approach to designing healing gardens and restorative outdoor spaces* (pp.194-198). Wiley.
- Cui, YT., Shi, W., Li, W. et al. (2026). Development and validation of a design model of virtual-reality therapeutic landscapes for anxiety reduction and emotion regulation. *Digital health*, 12.
- de Seixas, M., Williamson, D., Barker, G., & Vickerstaff, R. (2017). Horticultural therapy in a psychiatric in-patient setting. *BJPsych international.*, 14(4).

- Engemann, K., Pedersen, CB., Arge, L. et al. (2019). Residential green space in childhood is associated with lower risk of psychiatric disorders from adolescence into adulthood. *Proc Natl Acad Sci U S A*, 116(11).
- Fleming, L., & Kelijian, H. (2023). [Opportunities for therapeutic horticulture at botanical gardens \[including mental health populations\]](#). [Video]. YouTube.
- Freedle, LR., & Slagle, T. (2018). Applications of the neurosequential model of therapeutics in an integrative outdoor behavioral healthcare program for adolescents and young adults. *Proceedings of the second international neurosequential model symposium*. CF Learning Press.
- Griffin, L., Petsou, A., Hynes, R., & Moore, G. (2025). Debate: Urban versus rural environments - which is better for mental health? Beyond the urban and rural dichotomy, a call to consider quality, typology and space in greenspace strategies for mental health. *Child Adolesc Ment Health*, 30(2).
- Grigoletto, A. et al. (2023). Restoration in mental health after visiting urban green spaces, who is most affected? Comparison between good/poor mental health in four European cities. *Tenvirn. Res*, 223.
- Harries, B., Chalmin-Pui, L., Gatersleben, B. et al. (2023). Designing a wellbeing garden: A systematic review of design recommendations. *Design for Health*, 7(2).
- Howarth, M., Rogers, M., Withnell, N., & McQuarrie, C. (2018). Growing spaces: An evaluation of the mental health recovery programme using mixed methods. *J Res Nurs*, 23(6).
- Ibes, DC., & Forestell, CA. (2022). The role of campus greenspace and meditation on college students' mood disturbance. *Journal of American College Health*, 70.
- Ikei, H., Song, C., Sagasaki, Y., Nozaki, H., & Miyazaki, Y. (2025). [Physiological effects of a small green space installed on the side of a clinic for outpatients with depression](#). *Frontiers in Environmental Health*, 4.
- Iravani, H., Moghtaderi, M., & Romina Iravani, R. (2021). A comparative analysis of selected mental health disorders among older residents of suburbs versus neighborhoods. *Journal of Urban Design and Mental Health*, 7.
- Irish, J. (2019). Program example: Psychiatric, Rogers Memorial Hospital, Oconomowoc, Wisconsin. In Haller, Kramer and Capra (Eds.), *The profession and practice of horticultural therapy* (pp.183-184). CRC Press.
- Johnson, L., Guttridge, K., Parkes, J. et al. (2021). Scoping review of mental health in prisons through the COVID-19 pandemic. *BMJ Open*, 11(5).
- Jones, E. (2019). Program example: Vocational training in a therapeutic residential program for adults with addictions. In Haller, Kramer and Capra (Eds.), *The profession and practice of horticultural therapy* (pp.242-243). CRC Press.
- Kwan, RYC., Su, JJ., Lee, JLC. et al. (2025). The effects of a therapeutic immersive virtual reality programme on the mental health of residential care home residents living with physical disabilities: A multi-centre randomised controlled trial. *International Journal of Nursing Studies*, 105307.
- Lampert, T., Costa, J., Santos, O. et al. (2021). Evidence on the contribution of community gardens to promote physical and mental health and well-being of non-institutionalized individuals: A systematic review. *PLoS One*, 16(8).
- Lygum, VL., & Stigsdotter, UK. (2014). A garden at a crisis shelter for women and children survivors of domestic violence: Danner's Garden, Copenhagen, Denmark. In Cooper Marcus & Sachs (Eds.), *Therapeutic landscapes an evidence-based approach to designing healing gardens and restorative outdoor spaces* (pp.184-189). Wiley.
- Masterton, W., Carver, H., Parkes, T., & Park, K. (2020). Greenspace interventions for mental health in clinical and non-clinical populations: What works, for whom, and in what circumstances? *Health & Place*, 64.

- Maund, PR., Irvine, KN., Reeves, J. et al. (2019). Wetlands for wellbeing: Piloting a nature-based health intervention for the management of anxiety and depression. *International Journal of Environmental Research and Public Health*, 16(22).
- Natividad, M., Chávez, ME., Balagué, A. et al. (2025). Community therapeutic space for women with schizophrenia: A new innovative approach for health and social recovery. *Women*, 5(2).
- Olszewska-Guzzo, A., Fogel, A., Escoffier, N. et al. (2022). Therapeutic garden with contemplative features induce desirable changes in mood and brain activity in depressed adults. *Front Psychiatry*, 13.
- Pieters, HC, Ayala, L., Schneider, A. et al. (2018). Gardening on a psychiatric inpatient unit: Cultivating recovery. *Archives of Psychiatric Nursing*, 33(1), 57-64.
- Pullman, L. (2025). Landscape, well-being and connection: A qualitative study of community college students' perceptions of campus attributes. *Journal of Urban Design and Mental Health*, 9(1).
- Ratan, ZA., Gonzalo, Ó., Snowdon, N. et al. (2025). The essential elements for successful implementation of nature therapy programs in mental health services: A systematic review with narrative synthesis. Pre-print not peer reviewed.
- Saadati, FR., Hir, YP., & Narimani, M. (2025). The effectiveness of exposure to green space on absolute power of alpha wave and stress reduction in people with attention deficit hyperactivity disorder. *Journal of Research in Psychopathology*.
- Sachs, NA., Shepley, MM., Peditto, K. et al. (2019). Evaluation of a mental and behavioral health patient room mockup at a VA facility. *Health Environments Research & Design Journal*, 13(2).
- Sarkar, C., Webster, C., & Gallacher, J. (2018). Residential greenness and prevalence of major depressive disorders: A cross-sectional, observational, associational study of 94 879 adult UK Bio bank participants. *Lancet Planet Health*, 2.
- Schmid, HL., McCall, T., Rinderhagen, M. et al. (2025). The shifting role of nature and the landscape in psychiatric institutions: A case study from Germany in a historical perspective. *SSM-Qualitative Research in Health*, 100644.
- Shepley, MM., & Sachs, NA. (2020). Physical environments that support the mental health of staff and families in the NICU. *Journal of Perinatology*, 40.
- Stigsdotter, UK. (2014). Nacardia Healing Forest Garden, Hoersholm Arboretum, Copenhagen, Denmark. In Cooper Marcus & Sachs (Eds.), *Therapeutic landscapes an evidence-based approach to designing healing gardens and restorative outdoor spaces* (pp.198-204). Wiley.
- Tanigaiselvane, DJ. (2025). Urban green spaces as tools for mental health recovery: A convergence of landscape architecture, environmental psychology, and public policy. *International Journal of Emerging Multidisciplinary Research and Innovation*.
- Ulrich, RS., Borgren, L., & Lundin, S. (2012). Toward a design theory for reducing aggression in psychiatric facilities. Paper at ARCH12: Architecture/Research/Care/Health Conference, Sweden.
- Vujcic Trkulja, M., Tomicevic-Dubljevic, J., Tosevski, DL. Et al. (2021). Development of evidence-based rehabilitation practice in botanical garden for people With mental health disorders. *HERD*, 14(4).
- Wilhelm, K., Lomax, T., McCarthy, L. et al. (2025). Blurring boundaries: The role of hybrid green spaces in secure psychiatric care. *Oxford University Research Archives*.
- Wood, C., Wicks, C., & Barton, J. (2023). Green spaces for mental disorders. *Curr Opin Psychiatry*, 36(1).
- Woolhouse, C., Zerbi, CE., & McFarlane-Troy, C. (2025). Addressing a youth mental health crisis; Utilising therapeutic landscapes and creative approaches in an English school. *Journal of Outdoor and Environmental Education*.

Examples of mental health populations and plant-based programs:

Anne and Robert Lurie Children's Hospital in Chicago uses a program called *Garden Play* to address pediatric mental health challenges like separation anxiety, loss of control and autonomy, among others where registered horticultural therapist delivers inpatient and family sessions.

<https://hursthouse.com/4-ways-gardening-helps-kids/>

Blair's Sanctuary Garden is a therapeutic garden for women veterans, including those experiencing PTSD, military sexual trauma (MST), and more in Tacoma, Washington. The program uses sustainable cropping and "farm to table" methods to grow organic food for those in need through MADF's Eloise's Cooking Pot Food Bank.

<https://themadf.org/programs/>

<https://www.dvnf.org/blairs-sanctuary-garden-helps-women-veterans-heal/>

Common Roots Woodside Urban Farm uses gardening as a way to improve mental wellbeing and build community through volunteer programming, skill building, and events at two locations in Nova Scotia, one on the site of Nova Scotia Psychiatric Hospital.

<https://commonrootsurbanfarm.ca/>

Farm at Penny Lane, established in 2011, provides weekly programming with cooking, farming and harvesting to populations including people with mental health challenges, vocational program and partnerships with community groups for related activities (transportation to farmers market).

<https://www.med.unc.edu/psych/cecmh/services/recovery-services/farm-at-penny-lane/>

Freedom from Torture community garden, started in 1992 in Scotland, is part of the Natural Growth Project combining horticulture with psychotherapy.

<https://www.rhs.org.uk/shows-events/rhs-chelsea-flower-show/Gardens/2024/freedom-from-torture-garden>

Germany: Garden Therapy with Offenders with Mental Health Conditions symposium presentation by HT practitioner Rudiger Eckardt (2024) using the term accommodated persons for this population.

<https://www.youtube.com/watch?v=3Kobi7Q1yN4>

Gould Farm is a 700-acre residential therapeutic farm assisting adults with mental health challenges in Monterey, Massachusetts.

<https://gouldfarm.org/>

Groundwork program at UNC Chapel Hill delivers hands-on wellness focused activities in the Edible Campus Main Garden for students to support mental health, social connections and growing of fresh food.

<https://ncbg.unc.edu/2025/07/30/groundwork-student-gardening-wellness-group/>

Growing Grounds Enterprises, San Luis Obispo, CA, has delivered horticultural therapy and vocational training for adults living with mental illness as a program of Transitions-Mental Health Foundation.

<https://www.t-mha.org/program-details.php?id=13>

Insight Garden Program partners with inmates across California to provide a curriculum in vocational gardening and landscape training and is delivered by Land Together organization.

<https://insightgardenprogram.org/>

Jacksonville State University (Alabama) designs green spaces focused on mental health, restoration and college students which includes designed features like circular paths for ease of movement and accessibility, pergola/archways as focal points, hammock poles promoting socialization, benches and sculptures. Mindfulness workshops and interactive learning occurs in this space.

https://naturesacred.org/case_study/jacksonville-state-university/

Josiah White residential treatment facility in Wabash, IN has a 12-week horticultural therapy program for youth with substance use disorders focusing on sense of empowerment, relationship building, recognizing interdependence, and sense of community.

Mental Health Center of Denver is a horticultural therapy program for children diagnosed with a range of mental health diagnoses.

<https://www.youtube.com/watch?v=AA-7oWBZU6Y>

Mount Saint Vincent, Denver, CO uses garden space and horticultural therapy in its neurosequential model of therapeutics for children who have experienced developmental trauma or neglect.

<https://www.htinstitute.org/blog/horticultural-therapy-connects-with-youth-at-the-mental-health-center-of-denver/>

Pacific Quest outdoor behavioral health care program for treatment of adolescents and young adults struggling with emotional and behavioral difficulties uses wilderness therapy, HT & neurodevelopmental approach to treatment.

<https://pacificquest.org/horticultural-therapy/>

Plants and Blooms Reimagined in Washington DC has delivered th services since 2016 with a focus on mental wellness, environmentalism and education by using repurposed plants, workshops and now with a Bloom Mobile project going out into the community.

<https://dallasweekly.com/2025/07/a-blooming-business-expanding-plant-based-mental-health-services/>

Rooted in Recovery horticultural therapy program delivered through the North Carolina Botanical Garden, is a complementary therapy where gardening promotes health and wellness.

<https://www.med.unc.edu/psych/cecmh/services/recovery-services/horticulture-therapy-program/>

Seeds of Growth program at Idaho Botanical Garden delivers horticultural therapy to youth and young adults for those in alternative education or behavioral health programs.

<https://www.idahobotanicalgarden.org/horticulture-therapy/>

Skyland Trail nonprofit mental health organization in Atlanta GA has residential and day treatment programs for adults with bipolar, schizophrenia, major depression, anxiety disorder and other diagnoses using adjunctive therapies including horticultural therapy, art and music.

<https://www.skylandtrail.org/our-programs/why-skyland-trail/holistic-mental-health-care/expressive-therapies/>

Stella's Circle in St. John's, NL, Canada, provides services including plant-based activity to adults experiencing mental health challenges, addictions, trauma, poverty, & homelessness.

<https://stellascircle.ca/>

The Garden's Healing Force's family counselor Morgan Myers suggests ways to cope with mental health challenges like burnout, stress and depression using nature-based activities including one collecting plant material representing burdens.

<https://eastdallastherapy.com/the-gardens-healing-force/>

The Phoenix Garden Project at Her Majesty's Penitentiary (HMP) in Newfoundland and Labrador, Canada, offers inmates an arts-based and nature-based curriculum through mindfulness, gardening, and landscape training.

<http://www.hmppgp.ca/>

Thrive, based in the UK, uses a personal journey approach to treating people with mental health challenges, where horticulture-focused interventions support better health & wellbeing.

<https://www.thrive.org.uk/>

Unity Center for Behavioral Health, Oregon uses interdisciplinary teams for inpatient hospital patients with a range of mental health issues including trauma, PTSD, childhood trauma where plant-based strategies, HT interventions & its behavioral health garden address and treat issues.

https://naturesacred.org/sacred_place/unity-behavioral-health-garden/

Veterans' Growth charity in Tennessee helps ex-service personnel suffering from mental health issues using horticultural therapy and support.

<https://veteransgrowth.org/>

Vogel Alcove childcare center in Dallas, Tx works with homeless children experiencing mental health challenges where Look & Listen Sensory garden, Share & Care Vegetable garden, Bloom & Grow Wildlife garden support strategies addressing hypervigilance, altered sensory integration, chaos, and trauma.

<https://certified.natureexplore.org/vogel-alcove/>

Videos & webinars on mental health and plant-based programs

Addressing Mental Health Challenges Using Horticulture Programming [youtube] video by Morgan Whitaker Smith and Hillary Lindsay provides insights into this type of programming across mental health challenges.

<https://youtu.be/hxmNL9pPJLk>

Addressing Self-Regulation Challenges Using Horticultural Therapy & Therapeutic Horticulture [youtube] video by Lesley Fleming, HTR, Maureen Bethel & Tasha Roberts covers several populations that may have mental health issues: veterans, people with dementia, incarcerated and young children.

<https://www.youtube.com/watch?v=M6jHQpymkYA>

Blossom Programme: Nature-based Therapy for Survivors of Domestic Abuse [youtube] video was delivered as a 2023 American Horticultural Therapy Association conference session.

<https://www.youtube.com/watch?v=qWDXLAluMSM&t=2s>

Can Horticultural Therapy Really Help in the Treatment of Mental Illness? explains the therapeutic gardens and this treatment modality beginning with early and current history.

<https://www.youtube.com/watch?v=JQ4JNonmW4k>

Cultivating Resiliency in Youth with Deep Nature Connections [youtube] video/webinar by JoAnn Yates, HTR offers plant-based activities and examples that have been effective with youth.

<https://youtu.be/ppWSeB8EEKY>

Horticultural Therapy at Rogers Behavioral Health uses greenhouse, gardens and horticultural therapy.

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

Horticultural Therapy for Mental and Physical Health | Ask an Expert video provides info on stress and using plant-based and nature-based strategies for coping, building resiliency and promoting well-being.

<https://www.youtube.com/watch?v=6MvpENZ92M4>

Inspiration from Loveland Youth Gardeners [youtube] video/webinar by Erica Wharton includes information on this type of programming for vulnerable youth and successes plant-based programming provides.

https://www.youtube.com/watch?v=7yEQ3kDy_uk

Mental Health Center of Denver – Horticultural Adolescent Therapy video shows its program, explaining why this modality works with this age group.

https://www.youtube.com/watch?v=Zes_tmc9f1M

Plants, the Microbiome, and Mental Health Tedx video provides info on the relationship between plants, diet, mental health in this ongoing field of study,

<https://www.youtube.com/watch?v=AJG3zYqNgnE>

Prince William County Horticultural Therapy Program (video) at a psychosocial rehabilitation program supports adults with psychiatric and cognitive disabilities.

<https://www.youtube.com/watch?v=En-UCpnUFLU>

The Role of Therapeutic Horticulture in Wellness and Recovery webinar by Gwenn Fried, NYU Langone Medical Center NYC shares history and definitions on therapeutic horticulture.

https://www.youtube.com/watch?v=a_M_8Y--9XA

THAD (Therapeutic Horticulture Activity Database) offers TH activities across populations and settings including people with mental health challenges (activities: [care of houseplants](#), [field trip to community garden](#), [daily gardening tasks](#), [exploring renewal & personal growth](#), [salty moods – salty plants](#)).

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

Related organizations

Acknowledging contributions from participants of Florida Horticulture for Health Network's 2022 webinar [Addressing Mental Health Challenges Using Horticulture Programming](#) who identified programs for mental health populations.

Written & compiled by Lesley Fleming, Morgan Whitaker Smith, 2023; revised in 2024 by Lesley Fleming. Revised in 2026 by Lesley Fleming, Joanna Brown.