

**CATEGORY: POPULATIONS & PROGRAMS**

## **Senior Care/Dementia Care & Plant-Based Programs**

The body of work on older people and people living with dementia related to gardening, horticultural therapy and specifically designed gardens for this population is robust. Since 2025 the number of published research studies has grown dramatically, signaling a continued interest and commitment to older adults. Articles are appearing in a wide range of peer reviewed journals including *Journal of Clinical Nursing*, *Journal of Therapeutic Horticulture*, *Journal of American Medical Directors Association*, *BMJ Open*, *Frontiers in Psychology*, *Geriatric Nursing*, *Journal of Public Health*, among others. According to the research, interventions where horticulture plays a role for this population are expanding. Studies mentioning horticultural therapy for seniors but not necessarily identified in the title are also expanding and are included in this resource (Beaudoin & Tunink, (2025; Moshcenskaya, 2025; Kim & Kim, 2025; Kot et al., 2025; Yue et al., 2025).

Horticulture activity, programs, gardens, views of plants and access to nature and outdoors can have positive impacts on seniors in all of the health domains. These include social interactions, psychosocial benefits, nutritional benefits, sensory experiences and increased exposure to sunlight (vitamin D) for melatonin production, as well as reduction in agitation. Research validates these, with increasing interest in strategies for specific segments of elder populations including people living with dementia, seniors with physical deficits, those living in seniors' facilities and green care farms.

Research has included recent meta-analysis studies on efficiency of HT/TH with seniors (Alipor et al, 2020; Bae et al, 2021; Whelden & Sawin, 2023). Studies where specific metrics validate effectiveness of plant-based programming are increasing (Ascencio et al, 2019; Chen, 2023). Benefits of access to and the use of gardens for elder populations have been published more frequently (Koura et al, 2023; Ogura et al, 2022; Magnussen et al. 2021; Motealleh et al, 2022; Ng et al, 2022; Scott, 2023). Programs involving gardening seem to be expanding with many at senior living facilities; the benefits now being more widely embraced (refer to program examples below).

Articles published in nursing journals are appearing more regularly, with growing interest from these health care providers for strategies and programming involving horticulture (Huang & Yuan, 2023; Chou et al, 2024; Jueng & Liu, 2023; Lin et al, 2022; Lo et al, 2019).

Newer research on brain health, cognitive function, attitudes on aging, sense of hope and meaning in life's experiences, preventative geriatric medicine, and fall prevention are included in this bibliography where horticulture is playing a role in health.

**For related resources refer to category: Populations/Horticulture Programs in Specific Settings – Mental Health; category: Horticultural Therapy & Health Services – all sections; category: Horticulture for Health Overview – Gardening Health Benefits.**

### **Key Organizations**

[Administration on Aging](#) (AoA) - an agency of the U.S Department of Health and Human Services

[Alzheimer's Association](#)

[American Horticultural Therapy Association](#)

[Thrive](#)  
[Trellis Scotland](#)

## **Books, journals & epublications on senior/dementia care populations and programs**

[American Journal of Alzheimer's Disease & Other Dementias](#)

[Alzheimer's Research & Therapies](#)

[BMC Geriatrics](#)

Carman, J. (2021). [Design for generations.](#)

Cassidy, P. (2011). *Gardening for seniors.*

Chalfont, P. (2026). [The brave choice between knowing and forgetting: How we shape our mind's fate.](#)

Chalfont, G. (2008). *Dementia green care handbook of therapeutic design and practice.*

Chalfont, G. (2007). *Design for nature in dementia care.* Jessica Kingsley Publishers.

Cooper Marcus, C. & Sachs, N. (2014). *Therapeutic landscapes: An evidence-based approach to designing healing gardens and restorative outdoor spaces.* John Wiley and Sons. Inc.

Pollock, A. & Marshall, M. (Eds.) (2012). *Designing outdoor spaces for people living with dementia.* Hammond Press & DSDC.

## **Research & articles on senior/dementia care populations and programs**

Recently published selected research & articles:

Alipour, F., Ilali, E.S., Hesamzadeh, A. et al. (2020). The role of horticultural therapy in improving the quality of life in elderly people. *Journal of Mazandaran University of Medical Sciences*, 29(181).

Alzheimer's Association. (2024). [New IDEAS study \(imaging dementia—evidence for amyloid scanning\).](#)

Ascencio, J., Wojtaszek, D., & Davalos, D. (2019). Horticultural therapy support group for older adult caregivers: Examining intervention effectiveness using psychometrically validated measures. *Journal of Therapeutic Horticulture*, 29(2).

Bae, S.J., Lee, S.H., & Kim, D.S. (2021). The effect of horticultural therapy on cognitive function, depression, self-esteem and activity daily living (ADL) in dementia care-A systematic review and meta-analysis. *Journal of Korean Society of Rural Planning*, 27(4).

Barrett, J., Evans, S., & Mapes, N. (2019) Green dementia care in accommodation and care settings: A literature review. *Housing, Care and Support*, 22.

Beaudoin, S., & Tunink, C. (2025). What are the most effective therapies for depression in older adults residing in long-term care settings? *Evidence-Based Practice.*

Bell, G., Polack, S., Silarova, B., & Tabet, N. (2025). The effect of community-based group activities on psychological well-being in people living with dementia: A systematic review. *J Am Med Dir Assoc.*, 26(11).

Belser, C.T., Tavormina, H., & O'Hanlon, A. (2026). Gardening as a psychosocial well-being activity for adults: Integrating eco-wellness and developmental theory. *Adultspan Journal*, 25(1).

Besser, L. (2021). Green space exposure and brain health measures related to Alzheimer's disease: A rapid review. *BMJ Open*, 11(5).

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.

Bosia, D., Montacchini, E., Savio, L., & Tedesco, S. (2020). Aging-people accessibility to urban garden: A case study in Turin. In *International Conference on Applied Human Factors and Ergonomics*, (pp. 327-334). Springer.

- Bourdon, E., & Belmin, J. (2021). Enriched gardens improve cognition and independence of nursing home residents with dementia: A pilot-controlled trial. *Alzheimers Res Ther.*, 13(1).
- Brower, M.C. (2025). Using plants in therapeutic ways: Social work practice with older adults. *Health & Social Work*, 50(4).
- Brown, G., & Brady, G. (2025). "It's changed my behaviour and drug taking; Things are changing without even realising": The transformational potential of land-based programmes. In *The role of food in resettlement and rehabilitation* (pp. 62-79). Routledge.
- Browning, M.H., Lee, K., & Wolf, K.L. (2019). Tree cover shows an inverse relationship with depressive symptoms in elderly residents living in US nursing homes. *Urban Forestry & Urban Greening*, 41.
- Buse, C., Balmer, A., Keady, J. et al. (2023) 'Ways of being' in the domestic garden for people living with dementia: Doing, sensing and playing. *Ageing & Society* 17.
- Cassidy, P. (2019). The Portland Memory Garden: Collaboration in action. *AHTA Magazine*, 47(2).
- Catissi, G., Gouveia, G., Savieto, R.M. et al. (2024). Nature-based interventions targeting elderly people's health and well-being: An evidence map. *Int J Environ Res Public Health.*, 21(1).
- Çetin, M., & Gök Uğur, H. (2024). The effect of flower printing activities on the anxiety levels of elderly nursing home residents: Randomized controlled study. *Alternative Therapies*, 30.
- Chan, H.Y., Ho, R.C., Mahendran, R. et al. (2017). Effects of horticultural therapy on elderly' health: Protocol of a randomized controlled trial. *BMC Geriatr.*, 17(1).
- Chen, Q. (2023). A review of studies on the efficacy of horticultural therapy interventions based on physical and mental health indicators in the elderly. *Journal of Innovation and Development*, 3(2).
- Choe, E.Y., Lee, J.Y., & Montayre, J. (2025, July). Effectiveness of nature-based interventions in reducing agitation among older adults with dementia: A systematic review and meta-analysis. *Healthcare*, 13(14). MDPI.
- Chongxian, C.H.E.N., Weijing, L.U.O., Haiwei, L.I. et al. (2025). Review on the research of the relationship between residential landscape and elderly health. *Journal of South Architecture*, 1(4).
- Chou, H.C., Cheng, S.F., Jennifer Yeh, S.C., & Tang, P.L. (2024, Jan.). Effectiveness of a multicomponent activity and horticultural intervention for the hospitalized older adults: A randomized controlled trial: Effectiveness of intervention for the hospitalized older adults. *Geriatr Nurs.*, 55.
- Chu, H.Y., Chan, H.S., & Chen, M.F. (2021). Effects of horticultural activities on attitudes toward aging, sense of hope and hand-eye coordination in older adults in residential care facilities. *Int J Environ Res Public Health.*, 18(12).
- Chwa, A., Vasudevan, A., Chan, S.K.M. et al. (2025). The association of daily gardening and healthy ageing in Singapore. *Scientific Reports*, 15(1).
- Coban, F., Yuca, H., Aydın, B. et al. (2025). Analyzing quinoa seeds: LC-MS/MS and GC-MS/MS approaches for identifying a nutrient-rich functional food in Alzheimer's and diabetes care. *Chem Biodivers.*, 22(6).
- Collins, H., Van Puymbroeck, M., Hawkins, B.L., & Vidotto, J. (2020). The impact of a sensory garden for people with dementia. *Therapeutic Recreation Journal*, 54(1).
- D'Agostin, N.B., & Casarin, V. (2025). [Green spaces and natural elements in the architectural configuration of long-term care facilities for older adults: A systematic literature review.](#)
- Dahlkvist, E., Engström, M., & Nilsson, A. (2020). Residents' use and perceptions of residential care facility gardens: A behaviour mapping and conversation study. *Int J Older People Nurs.*, 15(1).
- D'Cunha, N.M., Isbel, S., McKune, A.J. et al. (2020). Activities outside of the care setting for people with dementia: A systematic review. *BMJ Open*, 10(10).

- de Boer, B., Buist, Y., de Bruin, S.R. et al. (2021). Working at green care farms and other innovative small-scale long-term dementia care facilities requires different competencies of care staff. *Int J Environ Res Public Health*, 18(20).
- de Bruin, S.R., Pedersen, I., Eriksen, S. et al. (2020). Care farming for people with dementia; What can healthcare leaders learn from this innovative care concept? *J Healthc Leadersh*, 12.
- Demark-Wahnefried, W., Oster, R.A., Smith, K.P. et al. (2024). Vegetable gardening and health outcomes in older cancer survivors: A randomized clinical trial. *JAMA Network Open*, 7(6).
- De Rui, M., Toffanello, ED., Veronese, N. et al. (2014). Vitamin D deficiency and leisure time activities in the elderly: Are all pastimes the same? *PLoS One*, 9(4).
- Detweiler, D., Murphy, P.F., Myers, L.C., et al. (2008). Does a wander garden influence inappropriate behaviors in dementia residents? *American Journal of Alzheimer's Disease & Other Dementias*, 23(1).
- Du, K., Kang, Y., & Jiang, Z. (2025). Application strategies of horticultural therapy in psychological care for the elderly guided by environmental psychology. *Integrative Medicine and Nursing Advances*, 1(1).
- Du, M., Wang, Y., Zhang, Y. et al. (2024). How outdoor horticultural activities affect elderly adults' thermal, physiological and psychological responses: A field study. *International Journal of Biometeorology*, 68(7).
- Duo, R., Xu, S., Chen, C. et al. (2022). Study on the construction of cognitive training program for elderly patients with mild cognitive impairment based on horticultural therapy theory. *Chinese Journal of Practical Nursing*.
- Eguchi, K., Koura, S., Eguchi, N., & Kondou, A. (2024). Verification of the physiological therapeutic effects of harvesting activities in a patient with moderate Alzheimer's Disease with long-term agricultural experience. *Open Journal of Therapy and Rehabilitation*, 12(3).
- Elbasyoni, M.E.M., & Gammaz, S.A. (2023). A qualitative therapeutic design approach for sensory garden design for people with dementia. *Civ Eng Archit*, 11.
- Fernández-Salido, N., Gallego-Valadés, A., Serra-Castells, C., & Garcés-Ferrer, J. (2025). Cultivating well-being: An exploratory analysis of the integral benefits of urban gardens in the promotion of active ageing. *Int J Environ Res Public Health*, 22(7).
- Fielder, H., & Marsh, P. (2021). 'I used to be a gardener': Connecting aged care residents to gardening and to each other through communal garden sites. *Australia's J Ageing*, 40(1).
- Fleming, L., Bethel, M., & Roberts, T. (2023). Self-regulation, its neuroscience foundations and horticultural therapy: Growing the connections. *Journal of Therapeutic Horticulture*, 33(1).
- Freeman, S., Banner, D., Labron, M. et al. (2022). "I see beauty, I see art, I see design, I see love." Findings from a resident-driven, co-designed gardening program in a long-term care facility. *Health Promot Chronic Dis Prev Can*, 42(7).
- Foster-Collins, H., Calitri, R., Tarrant, M. et al. (2025). 'I can still swing a spade': A qualitative exploratory study of gardening groups for people with dementia. *Ageing & Society*, 45(4).
- Gaikwad, D.S., Veerbhadrannavar, V., Kori, S., & Mane, R. (2024). An evaluation of the impact of horticultural therapy on depression in elderly individuals living in assisted living facilities. *International Journal of Geriatric Nursing*, 7(2).
- Gambella, E., Lombardi, L., Cicconi, D. et al. (2025). The Silver Agri Age project in Italy: A Montessori-inspired social intervention with older adults with mild cognitive impairment. Single-group pre-post pilot study protocol. *Frontiers in Public Health*, 13.
- Gao, S.Y., Ng, S.M., & Wan, E.H.Y. (2025). Evaluation of horticultural therapy for enhancing women's well-being: A randomized waitlist-controlled trial. *Research on Social Work Practice*, 35(4).

- Gholami, S., Geravandi, S., & Rostami, F. (2025). A quasi-experimental study to assess the impact of green gardens on elderly anxiety: A socio-ecological perspective. *Journal of Human Behavior in the Social Environment*, 35(6).
- Giang, T.A., Cheng, J.Y., Kwok, H.Y.F. et al. (2024). Effectiveness of horticultural therapy in older adults without dementia: A systematic review and meta-analysis. *Journal of the American Medical Directors Association*, 25(12).
- Haas, K., Simson, S.P., & Stevenson, N C. (2024). Older persons and horticultural therapy practice. In *Horticulture as Therapy* (pp. 231-255). CRC Press.
- Han, Y., Li, B., & Zhang, J. (2025). An analytic hierarchy process-based case study on older adult-friendly community therapeutic landscape design. *Frontiers in Public Health*, 13.
- 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.
- Hao, S., Zhang, D., Wen, Y. et al. (2024). Flowers or leaves? Assessing the impact of crape myrtle observation on the physical and mental well-being of senior citizens. *HortTechnology*, 34(3).
- Hassink, J., Vaandrager, L., Buist, Y., & de Bruin, S. (2019). Characteristics and challenges for the development of nature-based adult day services in urban areas for people with dementia and their family caregivers. *Int J Environ Res Public Health.*, 16(8).
- Heród, A., Szewczyk-Taranek, B., & Pawłowska, B. (2025). Parks and gardens as contributors to older people's perceived well-being and health. *Acta Horti.*, 1435.
- Heród, A., Szewczyk-Taranek, B., & Pawłowska, B. (2024). Enhancing self-esteem, well-being, and relaxation in the elderly through nature-based interventions. *Int J Environ Res Public Health.*, 21(7).
- Heród, A., Szewczyk-Taranek, B., & Pawłowska, B. (2022). Therapeutic horticulture as a potential tool of preventive geriatric medicine improving health, well-being and life quality—A systematic review. *Folia Horticulturae*, 34(1).
- Huang, Y., & Yuan, X. (2024). Smellscape as a healing factor in institutional gardens to enhance health and well-being for older people with dementia: A scoping review. *Journal of Clinical Nursing*, 33(2).
- Ideas.org. (2023). [Gardening for seniors and people with disabilities.](#)
- Innes, A., McLeod, M., Burke, E. et al. (2025). Outdoor-based care and support programs for community-dwelling people living with dementia and their care partners: A scoping review. *Journal of Dementia and Alzheimer's Disease*, 2(3).
- Innes, A., Dal Bello-Haas, V., Burke, E. et al. (2024). Understandings and perceived benefits of outdoor-based support for people living with dementia. *International Journal of Environmental Research and Public Health*, 21(8).
- Jevtic, S., Wittlinger, M., Teimann, S. et al. (2025). Impact of dementia-landscaped therapy garden on psychological well-being—A pilot study. *Journal of Neural Transmission*, 132(6).
- Jiang, H., Eaglestone, G., McCrone, P. et al. (2024). How are nature-based interventions defined in mild cognitive impairment and dementia studies? A conceptual systematic review and novel taxonomy. *Dementia*.
- Jueng, R.N., & Liu, S.Y. (2023). The effects of horticulture therapy on the meaning in life experiences of elderly in the long term care facilities. *Tzu Chi Nursing Journal*, 22(5).
- Jueng, R.N., Lin, C.Y., & Huang, Y.H. (2023). Systematic review on the positive mental health impact of older adults participation in horticultural activities in long term care facilities. *Horticulturae*, 9(10).
- Kabakci, M., Uğur, H. G., & Şengür, Ş. (2026). The effect of gardening activities applied to older people in a nursing home on psychological wellness and depression: A single-blind randomized controlled study. *Public Health Nursing*.

- Kang, G., Ji, H., & Yoon, J.Y. (2025). The effect of community health nurse-led multi-faceted group-based frailty prevention program for older adults: A multi-site pretest-posttest design. *BMC Nursing*, 24(1).
- Kikuchi, K., Takada, S., Otsuka, S. et al. (2025). Agricultural or gardening physical activity may slow neurovascular aging and prevent stroke and dementia: an experimental and cross-sectional study. *Frontiers in Aging Neuroscience*, 17.
- Kikukawa, H., & Toyoda, M. (2021). Gardening programs based on METs and HR values are needed to prevent dementia in elderly people requiring support. *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*.
- Kim, D.E., & Kim, B. (2025). The mediating effect of depressive symptoms on the relationship between activity engagement and cognitive function among older adults [including horticultural therapy]. *Research in Community & Public Health Nursing (RCPHN)*, 36(3).
- Kim, S.H., Seo, J.B., & Ryu, B.Y. (2024). Stress control in older people through healing garden activities. *Behavioral Sciences*, 14(3).
- Kim, J., Lee, J., Kim, Y. et al. (2023). The effects of a nature-based virtual reality program on emotional health and quality of life among older adults with dementia. *American Journal of Health Behavior*, 47(1).
- Kim, SO., Pyun, SB., & Park, SA. (2021) Improved cognitive function and emotional condition measured using electroencephalography in the activities. *HortScience*, 1(aop).
- Kim, Y., Jo, HS., Park, CS., & Kang, K. (2020). Comparing the effectiveness of the frequency and duration of the horticultural therapy program on elderly women with mild cognitive impairment and mild dementia. *J People Plant Environ.*, 23.
- Kim, Y.H., Park, C.S., Bae, H.O. et al. (2020). Horticultural therapy programs enhancing quality of life and reducing depression and burden for caregivers of elderly with dementia. *Journal of People Plants Environment*, 23.
- Kolster, A., Rautiainen, L.J., Aalto, U.L. et al. (2025). The importance of nature and wishes for nature-based experiences among older adults in assisted living facilities. *Geriatric Nursing*, 63.
- Kor, P.P.K., Liu, J.Y.W., Wong, A.K.C. et al. (2025). Effectiveness of a dyadic technology-enhanced home-based horticultural therapy on psychosocial well-being among people with dementia and their family caregivers: Multimethods pilot study. *JMIR Aging*, 8.
- Kot, S., Engineer, M., Gilman, E. et al. (2025). Exploring the role of generative AI in dementia resilience building activities [including horticultural therapy]: Uncovering opportunities and challenges. *ACM Transactions on Computer-Human Interaction*.
- Koura, S., Nishikawa, C., Inagaki, T. et al. (2023). Long-term active and passive horticultural therapy intervention for elderly patients with moderate dementia and AI analysis of medical records and care documents. *Open Journal of Therapy and Rehabilitation*, 11(1).
- Kundu, S., & Sengupta, J. (2025). "That Green Patch is the Only Hope for Us in the Twilight Years": Relevance of private gardens and other green spaces to senior residents in a peri-urban community. *Journal of Aging and Environment*.
- Lam, J.Y., Aw, S., Akksilp, K., & Chen, C. (2025). Urban care farming for older adults: A mixed-method feasibility and acceptability study. *Pilot and Feasibility Studies*.
- Lee, S.Y. (2025). A panel-based comparative observational study of the dementia care environment for older adults-focusing on a group home and a green care farm. *Journal of the Korean Housing Association*, 36(4).

- Levinger, P., Cerin, E., Milner, C., & Hill, K.D. (2022). Older people and nature: The benefits of outdoors, parks and nature in light of COVID-19 and beyond- where to from here? *Int J Environ Health Res.*, 32(6).
- Li, Y., Lin, X., Li, S. et al. (2025). Restorative environment design drives well-being in sustainable elderly day care centres. *Buildings*, 15(5).
- Liao, M.L., Shih, F.L., Lin, F.E. et al. (2021). Design ideas of a healing garden for improving the health of aging people with intellectual disability. *ISHS Acta Horticulturae 1313: International Symposium on Horticultural Therapies: Past, Present and Future*.
- Lin, Y., Lin, R., Liu, W., & Wu, W. (2022). Effectiveness of horticultural therapy on physical functioning and psychological health outcomes for older adults: A systematic review and meta-analysis. *Journal of Clinical Nursing*, 31.
- Liu, M., & Wang, B. (2025). Integrating natural non-pharmaceutical therapies into medical tourism: A dynamic health portrait-driven model for proactive older adult health and public health services. *Frontiers in Public Health*, 13.
- Liu, Q., Wang, F., Tan, L. et al. (2023). Comparative efficacy of various art therapies for patients with dementia: A network meta-analysis of randomized controlled trials. *Front Psychiatry.*, 14.
- Liu, L., Daum, C. Rincon, AR. et al. (2022). Ageing, technology, and health: Advancing the concepts of autonomy and independence. *Healthcare Management Forum*, 35(5).
- Lo, G.H., Tran, S.T., Patarini, J.C. et al. (2025). Gardening/yardwork over a lifetime is associated with less symptomatic knee osteoarthritis: Data from the Osteoarthritis Initiative. *Clinical Rheumatology*.
- Lo, S.K.L., Lam, W.Y.Y., Kwan, R.Y.C. et al. (2019). Effects of horticultural therapy: Perspectives of frail and pre-frail older nursing home residents. *Nurs Open.*, 6(3).
- Luxton, D., Thorpe, N., Crane, E. et al. (2025). Systematic review of the efficacy of pharmacological and non-pharmacological interventions for improving quality of life of people with dementia. *The British Journal of Psychiatry*.
- Lygum, V.L., Mathiasen, N., & Frandsen, A.K. (2025). The nature support model for dementia: A conceptual idea for green nursing home environments designed to support well-being throughout the last stages of dementia. *Frontiers in Psychology*, 16.
- Lygum, V.L., Mathiasen, N., & Frandsen, A.K. (2025). The nature support model for dementia: A conceptual idea for green nursing home environments designed to support well-being throughout the last stages of dementia. *Frontiers in Psychology*, 16.
- Magnussen, I.L., Alteren, J., & Bondas, T. (2021). "Human flourishing with dignity": A meta-ethnography of the meaning of gardens for elderly in nursing homes and residential care settings. *Glob Qual Nurs Res.*, 8.
- Makizako, H., Tsutsumimoto, K., Doi, T. et al. (2019). Exercise and horticultural programs for older adults with depressive symptoms and memory problems: A randomized controlled trial. *J Clin Med.*, 9(1).
- Malberg Dyg, P., Christensen, S., & Peterson, C.J. (2020). Community gardens and wellbeing amongst vulnerable populations: A thematic review. *Health Promot Int.*, 35(4).
- Mehta, R., Balaraman, AK., Sah, S. et al. (2025). Comment on 'Effectiveness of Horticultural Therapy in Older Patients With Dementia: A Meta-Analysis Systematic Review'. *J Clin Nurs.*, 34(2).
- Mita, S., Hosokawa, M., & Hayashi, T. (2021). The effect of reproducing two-dimensional photographs of flower arrangements in three dimensions on prefrontal blood flow in elderly patients with dementia. *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*.

- Mmako, N.J., Courtney-Pratt, H., & Marsh, P. (2020). Green spaces, dementia and a meaningful life in the community: A mixed studies review. *Health Place*, 63.
- Mochizuki-Kawai, H, Sakaba, T., & Yamakawa, Y. (2021). Indoor horticultural therapy for older adults living in a nursing home: Bedside structured floral arrangement program. *Geriatr Gerontol Int.*, 21(6).
- Monateclaro, C. (2022). Adapting horticultural therapy as fall prevention among community-dwelling older adults. *Journal of Therapeutic Horticulture*, 32(1).
- Moshchenskaya, AA. (2025). Designing interactive and intergenerational outdoor spaces: A case study and framework for long-term care settings. Doctoral dissertation: *Carleton University*.
- Motealleh, P., Moyle, W., Jones, C., & Dupre, K. (2022). The impact of a dementia-friendly garden design on people with dementia in a residential aged care facility: A case study. *HERD: Health Environments Research & Design Journal*, 15(2).
- Müller, B., Kropp, P., Cardona, M.I. et al. (2021). Types of leisure time physical activities (LTPA) of community-dwelling persons who have been screened positive for dementia. *BMC Geriatr.*, 21(1).
- Murrioni, V., Cavalli, R., Basso, A. et al. (2021). Effectiveness of therapeutic gardens for people with dementia: A systematic review. *Int J Environ Res Public Health.*, 18(18).
- Nishiwaki, M., Takada, S., Otsuka, S. et al. (2025). Effects of agricultural or gardening physical activity on cardiovascular disease and dementia-related markers via arterial stiffness, cognitive function, and cerebral white matter status: Results from cross-sectional and interventional studies. *Frontiers in Public Health*, 13.
- Ng, L., Oliver, E., & Laver, K. (2022). Beyond garden design: A review of outdoor occupation in hospital and residential care settings for people with dementia. *Aust Occup Ther J.*, 30.
- Nicholas, S.O., Giang, A.T., & Yap, P.L.K. (2019). The effectiveness of horticultural therapy on older adults: A systematic review. *J Am Med Dir Association.*, 20(10).
- Niu, X.Y., & Wang, J.J. (2025). Factors influencing participation in horticultural activities in nursing care homes: A qualitative study. *Frontiers of Nursing*, 12(4).
- Ogura, A., Izawa, K.P., Tawa, H. et al. (2022). Older phase 2 cardiac rehabilitation patients engaged in gardening maintained physical function during the COVID-19 pandemic. *Heart Vessels*, 37(1).
- Okamura, T., Ura, C., Taga, T. et al. (2021). Green care farms in urban settings as a new paradigm for dementia care. *Psychogeriatrics*, 21(5).
- Park, SA., Lee, AY., Park, HG., & Lee, WL. (2019). Benefits of gardening activities for cognitive function according to measurement of brain nerve growth factor levels. *Int J Environ Res Public Health.*, 16(5).
- Park, SA., Kim, SO., & Pyun, SB. (2021). Improved cognitive ability and emotional condition measured using electroencephalography in elderly during horticultural activities. *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*.
- Park, S.A., Son, S.Y., Lee, A.Y. et al. (2020). Metabolite profiling revealed that a gardening activity program improves cognitive ability correlated with BDNF levels and serotonin metabolism in the elderly. *International Journal of Environmental Research and Public Health*, 17(2).
- Peacock, K., Yuen, H.K., Malone, L.A. et al. (2025). Impact of a park visit program on the well-being of subsidized senior housing residents. *International Journal of Environmental Health Research*.
- Psychology Tools. (2024). [Psychological assessment tools for mental health: Depression and grief/loss/bereavement.](#)
- Quan, N., Lohman, M., Resciniti, N., & Friedman, D. (2020). A systematic review of interventions for loneliness among older adults living in long-term care facilities. *Aging & Mental Health*, 24 (12).

- Ramos, M.D., Purnell, M., Harris, J., & Giarratano, G. (2026). Nature-based approaches to dementia, cognitive impairment, and caregiver well-being: A scoping review of gardening and therapeutic strategies. *Archives of Gerontology and Geriatrics*.
- Rozani, V., & Vitman-Schorr, A. (2025). Assessing the effectiveness of horticultural therapy for family caregivers coping with dementia: A quasi-experimental mixed-method study. *Geriatr Nurs.*, 62(Pt A).
- Rushton, L., Smith, L., & Phillipson, L. (2025). [Gardens, agency and citizenship of people with dementia: A critical interpretive synthesis](#). *Ageing & Society*, 45(10).
- Sia, A., & Diehl, L. (2020). Nature-based activities for older adults: A case study in Singapore. *Journal of Therapeutic Horticulture*, 30(1).
- Sia, A., Kheng, S., Ng, T. et al. (2018). The effect of therapeutic horticulture on the psychological wellbeing of elderly in Singapore: A randomized controlled trial. *Journal of Therapeutic Horticulture*, 28(1).
- Scott, T.L. (2023). Health and wellbeing benefits of therapeutic gardens and gardening activities for older people living in residential aged care settings. In Marsh & Williams (Eds.), *Cultivated therapeutic landscapes*. Routledge.
- Scott, T.L., Jao, Y.L., Tulloch, K. et al. (2022). Well-being benefits of horticulture-based activities for community dwelling people with dementia: A systematic review. *Int J Environ Res Public Health.*, 19(17).
- Scott, T.L., Masser, B.M., & Pachana, N.A. (2020). Positive aging benefits of home and community gardening activities: Older adults report enhanced self-esteem, productive endeavors, social engagement and exercise. *SAGE Open Medicine*, 22.
- Smith-Carrier, T.A., Béres, L., Johnson, K. et al. (2021). Digging into the experiences of therapeutic gardening for people with dementia: An interpretative phenomenological analysis. *Dementia (London)*, 20(1).
- Stapley, S., Page, S., Wheat, H. et al. (2025). The dementia–nature–inclusivity nexus and the needs of people living with dementia. *Ageing & Society*, 45(8).
- Steffi, P., & Sreedaya, G.S. (2024). Geriatric horticultural therapy (GHT): An approach to geriatric wellness. *Agricultural Reviews*, 45(4).
- Styck, A.C. & George, D.R. (2022) Evaluating the impact of community gardening on sense of purpose for persons living with dementia: A cluster-randomized pilot study. *Journal of Alzheimer's Disease Reports* 6.
- Suppakittpaisarn, P., Saeidi-Rizi, F., Chang, C.Y. et al. (2025). Walking through different worlds: How walking in nearby nature affects older adults in the US and Taiwan. *Cities & Health*.
- Swift, S., Jenkins, N., Brown, M., & McCrory, M. (2024). “They didn't think we'd do it!”: Community gardening as an act of resistance for people with dementia. *Journal of Aging Studies*, 68.
- Thomas, C., Xing, Y., Knight, A., & Brown, D.J. (2025). A biophilic therapeutic framework for ageing well in care settings. *Buildings*, 15(24).
- Tong, K., Thompson, C.W., Carin-Levy, G. et al. (2025). Nature-based interventions for older adults: A systematic review of intervention types and methods, health effects and pathways. *Age and Ageing*, 54(4).
- Tseng, W.S., Ma, Y.C., Wong, W.K. et al. (2020). An indoor gardening planting table game design to improve the cognitive performance of the elderly with mild and moderate dementia. *Int J Environ Res Public Health.*, 17(5).
- Toth, M., Martin Palmer, L.A., Bercaw, L.E. et al. (2020). [Understanding the characteristics of older adults in different residential settings: Data sources and trends](#). U.S. Department of Health and Human Services.

- Tu, P.C., Cheng, W.C., Hou, P.C., & Chang, Y.S. (2020). Effects of types of horticultural activity on the physical and mental state of elderly individuals. *Int J Environ Res Public Health*, 17(14).
- Vancouver Coastal Health. (2023). [Bringing nature indoors: Tranquility Lounge provides therapy for long-term care residents](#). VCH.ca.
- Vitman-Schorr, A., Chen, M., Naveh, A. et al. (2024). Horticultural therapy impact on people with dementia. *BMC Geriatrics*, 24(1).
- Wang, J., Niu, X., Guo, R. et al. (2025). Feasibility and effects of horticultural activities on frailty, physical function, and quality of life among older adult residents in nursing homes: A quasi-experimental study. *Frontiers in Public Health*, 13.
- Wang, M., Qian, Y., Yu, X., & Xing, Y. (2024). Effectiveness of horticultural therapy in older patients with dementia: A meta-analysis systemic review. *Journal of Clinical Nursing*, 33(12).
- Whelden, T., & Sawin, EM. (2023). Therapeutic horticulture for dementia: A systematic review. *J Gerontol Nurs.*, 49(7).
- Wichrowski, MJ., & Moscovici, M. (2024). Horticultural therapy for individuals coping with dementia: Practice recommendations informed by related non-pharmacological interventions. *Healthcare (Basel)*, 12(8).
- Widodo, D., Widjanto, E., Wardiyati, T., & Yusuf, A. (2019). Stress of brain mapping in elderly people before and after giving horticultural therapy in planting flowers. *Indian Journal of Forensic Medicine & Toxicology*, 13(4).
- White, PC., Wyatt, J., Chalfont, G. et al. (2018). Exposure to nature gardens has time-dependent associations with mood improvements for people with mid- and late-stage dementia. *Innovative Practice Dementia (London)*, 17(5).
- Xiao, L., & Liu, Y. (2025, June). The empathy mechanism of human-plant interaction in horticulture therapy in digital media era: Types, characteristics and potentiality. In *International Conference on Human-Computer Interaction* (pp. 87-101). Springer Nature Switzerland.
- Xu, M., Gong, X., Xu, L. et al. (2025). More senses, greater benefits? Evaluating the restorative effects of plant exposure on older adults in thermoneutral indoor environments. *Building and Environment*.
- Xu, M., Lu, S., Liu, J., & Xu, F. (2023). Effectiveness of horticultural therapy in aged people with depression: A systematic review and meta-analysis. *Front. Public Health.*, 11.
- Yang, Y., Kwan, R.Y.C., Zhai, H.M. et al. (2022). Effect of horticultural therapy on apathy in nursing home residents with dementia: A pilot randomized controlled trial. *Aging Ment Health.*, 26(4).
- Yasin, S. (2025). Exploring multisensory biophilic design as a salutogenic intervention to enhance mood of older adults with dementia. Doctoral dissertation: *Bilkent University*.
- Yat-Fan, N., Kit-Ming, J., & Fung, CYY. (2021). The effects of horticultural therapy on elderly with chronic pain in Hong Kong. *AHTA Magazine*, 49(2).
- Yeo, N.L., Elliott, L.R., Bethel, A. et al. (2020). Indoor nature interventions for health and wellbeing of older adults in residential settings: A systematic review. *The Gerontologist*, 60(3).
- Yuen, I., & Kwok, T. (2025). Effect of virtual zen garden on quality of life of residents in long-term care home. *International Journal of Environmental Research and Public Health*, 22(4).
- Yun, J., Yao, W., Meng, T., & Mu, Z. (2024). Effects of horticultural therapy on health in the elderly: A review and meta-analysis. *Journal of Public Health*, 32(10).
- Yue, W., Chen, Y., & Ma, X. (2025). Effects of different art therapy interventions [including horticultural therapy] on cognitive functions in older adults: A systematic review and network meta-analysis. *Geriatric Nursing*, 64.
- Zandi, A., & Wung, S.F. (2025). Health effects of plants, light, and natural elements of biophilic interventions in confined settings: A systematic review. *Frontiers in Physiology*, 16.

Zhang, Y.W., Wang, J., & Fang, T.H. (2022). The effect of horticultural therapy on depressive symptoms among the elderly: A systematic review and meta-analysis. *Frontiers in Public Health*, 10.

Zhang, Y., Wu, L., Zhao, W. et al. (2025). Nature's shield - Harnessing green spaces to combat dementia: A global meta-analysis. *Neurosci Biobehav Rev.*, 178.

Zhao, Y., Liu, Y., & Wang, Z. (2020). Effectiveness of horticultural therapy in people with dementia: A quantitative systematic review. *J Clin Nurs Special Issue*.

Zhu, S., Wan, H., Wang, L., & Ye, C. (2023). Effects of horticultural therapy on social function for elderly inpatients with cognitive dysfunction. *Chinese Journal of Behavioral Medicine and Brain Science*.

### **Examples of senior care/dementia care with plant programming**

*Alzheimer Scotland* website explains horticultural and other therapeutic modalities being used with this population, including therapeutic activities, sensory interventions, cognitive stimulation and support services.

<https://www.alzscot.org/living-with-dementia/getting-support/accessing-alzheimer-scotland-support/therapeutic-activity/horticultural-therapies>

*Banfield Pavillion, British Columbia Canada* offers horticultural therapy in conjunction with recreation therapy as an interdisciplinary approach to senior care indoors and in outdoor garden courtyard setting.

<https://www.vch.ca/en/vancouver-general-hospital-vgh/banfield-pavilion>  
<https://www.youtube.com/watch?v=30lbfm9GoYI>

*Bloom Social Therapeutic Horticultural Healing Garden Project for the Elderly*, in Lagos Nigeria, was a collaboration with Global Brain Health Institute, Alzheimer's Association and Alzheimer's Society where gardening, art and social interactions sought to improve the mental health and joy of living for the elderly.

<https://www.gbhi.org/projects/bloom-social-therapeutic-horticultural-healing-garden-project-elderly>

*Eldergrow* company offers contracted plant-based services at seniors' facilities indoors with a focus on therapeutic benefits.

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

*Jacqueline Fiske Healing Garden* in Jupiter, Fl. fosters the physical, mental and spiritual restoration of patients, many seniors, distracting them from the medical setting.

<https://healthcaredesignmagazine.com/news/jacqueline-fiske-healing-garden-jupiter-medical-center-jupiter-fl/2353/>

*Maude's Garden* in Seattle, Washington, recipient of AHTA's 2025 Therapeutic Garden Design Award for its sensory-rich space designed for individuals with memory loss, offers opportunities for exploration, connection and therapeutic horticulture programming.

<https://themoryhub.org/garden>

*Rest-Stop-Ranch*, Massachusetts is a 4-acre accessible garden specifically designed for long-term caregivers and care-receivers as a therapeutic and inclusive space with ADA-compliant paths, sensory gardens, special events and flower festivals. Open by appointment or during events.

<https://rest-stop-ranch.org/>

*San Francisco Campus for Jewish Living's Acute Geriatric Psychiatry Hospital* has gardens and horticultural therapy groups in support of active living and quality of life, led by registered horticultural therapist and medical social worker April Ellis. Interview.

<https://www.htinstitute.org/2023-spring-newsletter/>

*Seeds for Seniors*, part of a horticultural therapy program at A.G. Rhodes nonprofit nursing homes in Georgia is delivered through their Therapy and Rehabilitation department by a registered horticultural therapist in gardens, greenhouses, activity spaces and bedside.

<https://www.agrhodes.org/horticulturaltherapy/>

Sensory mobile immersive landscape experience (SMILE) for senior residents provides access and participation in HT/rec therapy interventions to people who are not able to attend sessions outside their rooms at Banfield Pavillion, BC. (refer to this facility previously mentioned).

<https://www.vch.ca/en/news/bringing-nature-indoors-tranquility-lounge-provides-therapy-long-term-care-residents>

*Sunnyside Health and Rehabilitation Center* in Sarasota FL uses an indoor therapeutic horticulture garden, to deliver and support gardening at senior facilities, funded by Centers for Medicare and Medicaid Services and Florida's Agency for Health Care Administration.

<https://www.sarasotamagazine.com/news-and-profiles/2021/07/rehabilitation-center-begins-nature-inspired-therapy-program>

*The Back Porch Garden at Medford Leas* used by assisted living and skilled nursing residents at this senior's facility allows for concerts, bbqs, classes and special events in the rooftop garden.

<https://designforgenerations.com/case-studies/the-back-porch-garden-at-medford-leas/>

*The Ruby Pardue Blackburn Adult Day Health Care Center*, Wilkesboro, NC has an outdoor memory care garden with walking paths, covered patio, sitting areas and horticultural therapy section designed by Jack Carman, FASLA, Design for Generations.

<https://designforgenerations.com/case-studies/the-ruby-pardue-blackburn-adult-day-health-care-center-wilkesboro-nc/>

*University of California Cooperative Extension senior gardening program* demonstrates how these programs can contribute to healthy lifestyles and habits with CalFresh Healthy Living University of California supporting seniors growing food for selves and others.

<https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=39474>

### **Videos, websites & webinars on senior care/dementia care with plant programming**

[AARP hosts virtual and in-person events](#) with a gardening and/or nature events theme.

*Addressing Self-Regulation Challenges Using Horticultural Therapy & Therapeutic Horticulture* webinar/video from the Florida Horticulture for Health Network discusses this topic, along with applications for senior and dementia populations.

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

*Benefits of Horticultural Therapy Techniques for People Living with Dementia* online brief by Joan Asseff on behalf of Alzheimer's Texas shares tips.

[https://www.txalz.org/wp-content/uploads/2022/06/benefits\\_of\\_horticultural\\_therapy\\_for\\_people\\_living\\_with\\_dementia.pdf?x49751](https://www.txalz.org/wp-content/uploads/2022/06/benefits_of_horticultural_therapy_for_people_living_with_dementia.pdf?x49751)

*Plant Programming for Seniors* webinar youtube video from the Florida Horticulture for Health Network uses a forum with HT practitioners to share ideas for gardening, therapeutic horticulture and gardens.

<https://www.youtube.com/watch?v=XPtsg3uAfw0>

Rodiek, S. (2009). *Access to nature for older adults* [3 DVDs – 93 minutes]. Center for Health Systems & Design.

*Societe Alzheimer Society Nova Scotia* fact sheet on dementia and African Nova Scotians identifies prevalence, risk factors and services available.

<https://alzheimer.ca/ns/sites/ns/files/documents/2023%20HAAC%20Rack%20Card%20Updated.pdf>

THAD (Therapeutic Horticulture Activity Database) offers TH activities across populations including seniors and people living with dementia (activities like [blueberry activities](#), [care of houseplants](#), [celery shenanigans](#), [choose one: rose or daisy](#), [community gardening with dementia populations](#), [forget me not flowers/dementia & seed pots](#)).

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

*Trellis Scotland* has online plant activities appropriate for many populations including indoor flowering bulbs and printing using natural materials.

<https://www.trellisscotland.org.uk/live-demos>

## **Related organizations**

Horticultural Therapy Associations

Written & compiled by Lesley Fleming Dec 2021; revised in Nov 2022 by Lesley Fleming, Siang Tham, Bree Stark; revised in 2023 by Lesley Fleming; revised in 2024 and 2026 by Lesley Fleming, Joanna Brown.