

CULTIVATE

FLORIDA HORTICULTURE FOR HEALTH NETWORK

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The Florida Horticulture for Health Network's vision: To promote activities and connect organizations to each other and resources that use horticulture to improve health including therapeutic horticulture and horticultural therapy, landscapes for health, nature, emerging professional support, allied horticulture and health services, community and school gardens, and food action initiatives.

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Horticultural Therapy with Female Survivors of Human Trafficking

By Zuzana Poláčková

Photos by H. Rivera & J. Fleming

Female survivors of human trafficking face many health challenges physically, emotionally, socially, spiritually, and behaviorally. Many have experienced substance abuse and sexual abuse related to human trafficking. Horticultural therapy (HT) is now being used to address these co-occurring health challenges to begin a path to recovery and healing from trauma. It has been described as the bridge from despair to hope and healing. HT is a recognized therapeutic modality using plant-based activity in a therapeutic process to achieve specific and documented health outcomes.

[Human trafficking and sexual abuse](#) are growing issues in society. Physical or sexual violence is a public health problem that affects more than one-third of all women globally (London School of Hygiene & Tropical Medicine, 2018; Coverdale et al., 2020; De Shalit et al., 2020). Over 50% of women have experienced sexual violence involving physical contact during their lifetime, and one in four women has experienced rape or attempted rape (CDC, 2022).

Research in the *Journal of Human Trafficking* and other publications continue to tease out [health challenges faced by victims and survivors of human trafficking](#) (Altun et al., 2017; Vellani & Kristof, 2021). A [systematic review found that human trafficking](#) is associated with high levels of physical and sexual violence prior to and during trafficking (Hemmings et al., 2016; [Stöckl et al., 2021](#); Ramaj, 2021). Many survivors experience physical and sexual abuse from partners, family members and other perpetrators even after escaping the exploitation (Ottisova et al., 2016). Over three-quarters reported abuse in childhood, one-quarter of sexual abuse, and two-quarters of physical and emotional abuse prior to trafficking (Coverdale et al., 2020). Research published in 2022 suggests that there is a link between female victims of trafficking and intellectual disabilities, with this group more often involved in commercial sexual exploitation (Jagoe et al., 2022). Human trafficking preys on vulnerabilities—marginalization, employment instability and economic insecurity (Jagoe et al., 2022; ICAT, 2022; ATEST, 2021).

Health issues prevalent in trafficking victims include substance abuse, sexually transmitted disease, pelvic pain, rectal trauma and urinary difficulties, as well as lack of self-worth, depression, stress-related disorders, confusion, disorientation, denial, shame, helplessness, disbelief, grief, PTSD, suicidal ideations and nervous system dysregulation (Jagoe et al., 2022; Hemmings et al., 2016; Coverdale et al., 2020; DHHS, nd.; Vellani & Kristof,



2023; Altun et al., 2017). Trauma, both psychological and physical, is prevalent in this population, which impacts their perception of the world. Feelings of intense fear, helplessness, horror, anger, and uncontrollable mood swings are evident, exhibited by self-regulation dysfunction, impaired neural response flexibility, distorted coping mechanisms and unhealthy behavioural patterns (SAMHSA, 2014; Reid et al., 2020; [Casassa et al., 2021](#); Van der Kolk, 2000; [Okech et al., 2018](#)).

[Therapeutic interventions that incorporate trauma-informed](#) and recovery care, along with survivor-centred theory are being used with survivors of human trafficking (Gordon et al., 2018; Coverdale et al., 2020). Horticultural therapy is one such intervention. It is able to integrate these approaches into the horticulture-based modality.

Research and evidence-based practice have validated the benefits of HT. Specific research on female survivors of human trafficking and HT is limited. Research by [Chen \(2021\)](#), Silvia-Rodriguez Bonazzi & Febles (2022), and [Branco \(2022\)](#) provide insights into trauma and trafficking. Some health challenges and health outcomes experienced by other populations may be pertinent to survivors of human trafficking and inform their HT treatment:

- reduced stress and psychiatric symptoms; stabilized mood and increased sense of tranquility, spirituality, and enjoyment (Shao et al., 2020; Olszewska-Guizzo et al., 2022; Ulrich et al., 1991; Cipriani et al., 2022)
- increased self-efficacy and self-esteem, reduction in mental dysfunction (Park, 2021; Wiesinger et al., 2006)
- development of group cohesiveness and a sense of belonging (Diamant et al., 2010)
- development of sustainable vocational skills for clients (Silvia-Rodriguez Bonazzi et al., 2022)
- strategies to cope with trauma (Wise, 2019; Silvia-Rodriguez Bonazzi et al., 2022)

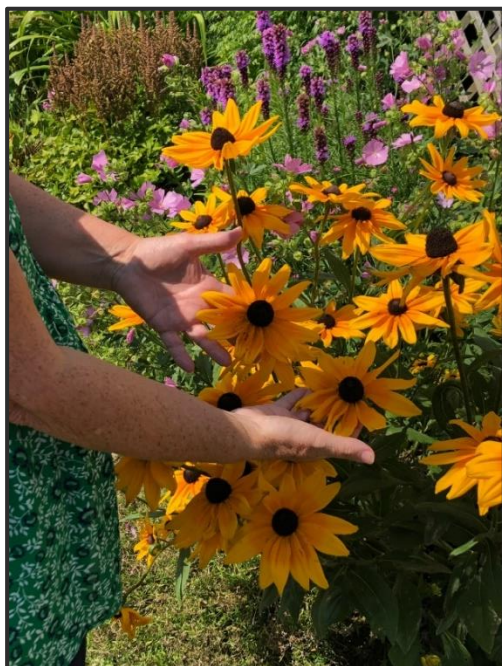
Horticultural therapy programs led by trained professionals have been able to alleviate anger, aggression, depression, and other negative feelings across populations. Health improvements related to behavioural and social interactions—social inclusion and social isolation—challenges for human trafficking victims and other populations, have been documented in HT services (Okech et al., 2018; Bahamonde, 2019). Therapeutic activities like pruning, [smashing pots and putting them back together](#), digging, mixing soil, raking, or seed germination, along with therapeutic techniques involving reflection, mindfulness, meditation and connection with truth and nature, are used in HT, the latter important for spiritual and emotional health improvements for survivors of human trafficking and other populations.



Physical health challenges, a hallmark of this (and other) population(s), are being treated by a variety of interventions including HT. Horticultural therapy activities can help clients improve physical coordination including proprioception, increase physical exercise, increase exposure to sunlight and Vitamin D (essential for circadian rhythm related to balanced sleeping patterns), the latter vital in recovery and healing processes per research on addiction recovery (TRWH, 2023). Research has established that 20-minute gardening activities with low to moderate intensity can help increase the production of two main brain proteins BDNF and PDGF, critical for healthy brain functioning (Park et al., 2019; Tu & Chiu, 2020).

Horticultural Therapy with Female Survivors of Human Trafficking

Horticultural therapy programs at a facility in Kenya, *Community Gardens* in the UK, and a recovery home in Canada were developed and delivered for vulnerable populations of individuals with substance abuse, domestic violence, and sexual abuse problems. In each of the groups, unreported female survivors of sex trafficking were identified. Of note—survivors did not or would not always recognize their situation. Each of these programs focused on identifying needs and variabilities specific to, and suitable for female survivors. One of the programs used a clinical HT treatment modality. The other two were delivered as therapeutic horticulture, a less formalized health intervention.



The HT programming used the therapeutic process - identifying health challenges and goals, selecting hands-on horticultural activities, and measuring outcomes, within the context of creating new opportunities for trauma healing (LaRocque, 2019). Mindfulness, guided visualization, and metanarrative-storytelling techniques were incorporated into HT sessions, informed by Kaplans' attention restoration theory (Kaplan & Kaplan, 1989).

The metanarrative technique was particularly effective with female victims of human trafficking. Using storytelling within HT sessions, discussing fictional figures, gardens and situations, provided allegories for real-life experiences, reinforcing an overarching account or interpretation of events. This provided a pattern or structure for participants' beliefs, giving meaning to their experiences. The three HT programs mentioned used a framework of four historical and anecdotal gardens. Metanarratives

helped to make the connection between the individual's personal journey with others in the group who had experienced similar violence. Sharing their stories supported the development of coping tools where their own reality was interpreted in a new way. The HT modality provided a non-threatening and plant-based medium in support of healing.

Further research and use of HT with female survivors of human trafficking will provide evidence-based practices which may be applicable to survivors of human trafficking from all genders, ages, and geographic locations.

- Altun, S., Abas, M., Zimmerman, C., Howard, L.M. & Oram, S., (2017) Mental health and human trafficking: Responding to survivors' needs. *BJPsych Int.*, 14(1), 21–23. doi: [10.1192/s205647400000163x](https://doi.org/10.1192/s205647400000163x)
- Alliance To End Slavery & Trafficking (ATEST). (2021). Addressing Vulnerabilities to Labor and Sex Trafficking. <https://endslaveryandtrafficking.org/wp-content/uploads/2020/12/Addressing-Vulnerabilities-Brief.pdf>
- Bahamonde, A. (2019). Mental health through the art of gardening. *Journal of Therapeutic Horticulture*, 29(2).
- Branco, P. (2018). How can therapeutic horticulture help meet the complex needs of domestic violence survivors and their children? VAWnet – A project of the National Resource Centre on Domestic Violence. <https://vawnet.org/news/how-can-therapeutic-horticulture-help-meet-complex-needs-domestic-violence-survivors-and-their>
- Casassa, K., Knight, L. & Mengo, C. (2021). Trauma bonding perspectives from service providers and survivors of sex trafficking: A scoping review. *SAGE Journals, Trauma, Violence, & Abuse*, 23(3). <https://doi.org/10.1177/1524838020985542>
- Centers for Disease Control and Prevention (CDC). (2022). What is sexual violence? <https://www.cdc.gov/violenceprevention/sexualviolence/fastfact.html>
- Chen, E.Y., Robichaux, K., Gordon, M.R., Coverdale, J.H., Shah, A., Davis, M.P. & Nguyen, P.T. (2023) A pilot program's healthcare response to human trafficking in Houston, Texas. *Journal of Human Trafficking*, 9(1), 119–129. doi: [10.1080/23322705.2020.1865095](https://doi.org/10.1080/23322705.2020.1865095)
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2323517/#b9-mjmo902p111>
- Cipriani, J., Benz, A., Holmgren, A. et al. (2022). A systematic review of the effects of horticultural therapy on persons with mental health conditions. *Occupational Therapy Mental Health*, 33(1), 47–69.
- Coverdale, J.H., Gordon, M.R. & Nguyen, P.T. (2020). *Human Trafficking - A Treatment Guide for Mental Health*

- Professionals. American Psychiatric Association Publishing.
https://books.google.ca/books?hl=en&lr=&id=l-fqDwAAQBAJ&oi=fnd&pg=PR9&ots=ioH2LP6O3S&sig=_5owvqO8sfyUPRB-XOuJCNEJANI&redir_esc=y#v=onepage&q&f=false
- De Shalit, A., Van der Meulen, E. & Guta, A. (2020). Social service responses to human trafficking: The making of a public health problem. *Culture, Health & Sexuality*, 23(12), 1717-1732.
<https://doi.org/10.1080/13691058.2020.1802670>
- Department of Health & Human Service USA (DHHS). (nd.). Resources: Common health issues seen in victims of human trafficking.
https://www.acf.hhs.gov/sites/default/files/documents/orr/health_problems_seen_in_traffick_victims.pdf
- Diamant, E. & Waterhouse, A. (2010). Gardening and belonging: Reflections on how social and therapeutic horticulture may facilitate health, wellbeing and inclusion. *Br. J. Occup. Ther.*, 73, 84–88.
doi: 10.4276/030802210X12658062793924 <http://www.greenfingersproject.com/wp-content/uploads/2012/11/Gardening-and-belonging-reflections-on-how-social-and-therapeutic-horticulture-may-facilitate-health-wellbeing-and-inclusion.pdf>
- Gordon, M., Salami, T., Coverdale, J. & Nguyen, P.T. (2018). Psychiatry's role in the management of human trafficking victims. *Journal of Psychiatric Practice*, 24(2), 79–86.
<https://doi.org/10.1097/prs.0000000000000287>
- Hemmings, S., Jakobowitz, S., Abas, M., Bick, D., Howard, L.M., Stanley, N., Zimmerman, C. & Oram, S. (2016). Responding to the health needs of survivors of human trafficking: A systematic review. *BMC Health Serv Res.*, 16, 320. <https://doi.org/10.1186/s12913-016-1538-8>
- The Inter-Agency Coordination Group against Trafficking in Persons (ICAT). (2022). Addressing vulnerability to trafficking in persons, Issue Brief 12.
https://www.icmpd.org/file/download/57956/file/icat_issue_brief_12_vulnerability_to_tip_published.pdf
- Jagoe, C., Toh, PYN. & Wylie, G. (2022) Disability and the risk of vulnerability to human trafficking: An analysis of case law. *Journal of Human Trafficking*. doi: [10.1080/23322705.2022.2111507](https://doi.org/10.1080/23322705.2022.2111507)
- Kaplan R. & Kaplan, S. (1989). *The Experience of Nature: A Psychological Perspective*. Cambridge University Press.
- LaRocque, 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.
- London School of Hygiene & Tropical Medicine. (2018). Gender-based violence must be at the heart of global health agenda – expert comment.<https://www.lshtm.ac.uk/newsevents/news/2018/gender-based-violence-must-be-heart-global-health-agenda-expert-comment>
- Olszewska-Guzzo, A., Fogel, A., Escoffier, N., Sia, A., Nakazawa, K., Kumagai, A., Dan, I. & Ho, R. (2022). Therapeutic garden with contemplative features induces desirable changes in mood and brain activity in depressed adults. *Front Psychiatry.*, 13, 757056. doi: 10.3389/fpsy.2022.757056
- Okech, D., Hansen, N., Howard, W., Anarfi, J.K. & Burns, A.C. (2018). Social support, dysfunctional coping, and community reintegration as predictors of PTSD among human trafficking survivors. *Behavioral Medicine (Washington, D.C.)*, 44(3), 209–218. <https://doi.org/10.1080/08964289.2018.1432553>
- Ottisova, L., Hemmings, S., Howard, L. M., Zimmerman, C. & Oram, S. (2016) Prevalence and risk of violence and the mental, physical, and sexual health problems associated with human trafficking: An updated systematic review. *Epidemiology and Psychiatric Sciences*, 25, 317–341.
- Park, SA. (2021). Theory and constructs of using horticulture for health and well-being. *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, 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), 760. doi: 10.3390/ijerph16050760
- Ramaj, K., (2021). The aftermath of human trafficking: Exploring the Albanian victims' return, rehabilitation, and reintegration challenges. *Journal of Human Trafficking*. doi: [10.1080/23322705.2021.1920823](https://doi.org/10.1080/23322705.2021.1920823)



- Reid, J.A., Richards, T.N. & Kulig, T.C. (2020). Human trafficking and intimate partner violence. In Geffner, White, Hamberger, Rosenbaum, Vaughan-Eden & Vieth (Eds.), *Handbook of Interpersonal Violence and Abuse Across the Lifespan*. Springer. https://doi.org/10.1007/978-3-319-62122-7_159-1
- Shao, Y., Elsadek, M. & Liu, B. (2020). Horticultural activity: Its contribution to stress recovery and wellbeing for children. *International Journal Environ Res Public Health*, 17(4), 1229. doi: 10.3390/ijerph17041229
- Silva-Rodriguez Bonnazzi, D. & Febles, A. (2022). Horticultural therapy program for trauma survivors. Horticultural Therapy Institute. <https://www.htinstitute.org/blog/horticultural-therapy-program-for-trauma-survivors/>
- Stöckl, H., Fabbri, C., Cook, H., Galez-Davis, C., Grant, N., Lo, Y., Kiss, L. & Zimmerman, C., (2021). Human trafficking and violence: Findings from the largest global dataset of trafficking survivors. *J Migr Health*, 4, 100073. doi: 10.1016/j.jmh.2021.100073
- Substance Abuse and Mental Health Services Administration (SAMHSA). (2014). *Trauma-Informed Care in Behavioral Health Services. Treatment Improvement Protocol (TIP) Series 57*. HHS Publication No. (SMA) 13-4801., 63. <https://store.samhsa.gov/product/TIP-57-Trauma-Informed-Care-in-Behavioral-Health-Services/SMA14-4816>
- The Women's The Royal Women's Hospital, Victoria Australia (TRWH) (n.d.). Sleep, sunshine & vitamin D. <https://www.thewomens.org.au/health-information/periods/healthy-periods/sleep-sunshine-vitamin-d>
- Tu, H.M. & Chiu, P.Y. (2020). Meta-analysis of controlled trials testing horticultural therapy for the improvement of cognitive function. *Science Reports*, 10(1), 14637. doi: 10.1038/s41598-020-71621-7
- Ulrich, R.S., Simons, R.F., Losito, B.D., Fiorito, E., Miles, M.A. & Zelson M. (1991). Stress recovery during exposure to natural and urban environments. *J. Environ. Psychol.*, 11, 201–230, doi: 10.1016/S0272-4944(05)80184-7
- Van der Kolk, B. (2000). Posttraumatic stress disorder and the nature of trauma. *Dialogues Clin Neurosci.*, 2(1), 7-22. doi: 10.31887/DCNS.2000.2.1/bvdkolk <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3181584/>
- Vellani, V. & Kristof, T.S. (2021). Identifying and responding to sex trafficking victims in healthcare environments. CRIMRXIV. <https://www.crimrxiv.com/pub/sextrafficking/release/2>
- Wise, J. (2019). Perspective: Using horticultural therapy to recover from trauma. In Haller, Kennedy & Capra (Eds.), *The Profession and Practice of Horticultural Therapy*, 134-135. CRC Press.
- Wiesinger, G., Neuhauser, F. & Putz, M., (2006). Farming for health in Austrian farms, horticultural therapy, animal-assisted therapy. In Hassink & Dijk (Eds.), *Farming for Health: Green-Care Farming Across Europe and the United States of America*. 233–248. Springer.

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The article is being published concurrently in Nova Scotia Horticulture for Health Network's Digging In.



Horticultural Therapy Activity Plan – Sowing Seeds in Winter

Text by Zuzana Poláčková & Lesley Fleming, HTR

Photos by Z. Poláčková & Z. Schaeffer.Unsplash

This activity was developed and delivered for programs with survivors of trauma, including female survivors of human trafficking. It has been delivered as clinical horticultural therapy (HT) and as therapeutic horticulture (TH), the latter with therapeutic goals that were not clinically charted as they were in HT. The activity is appropriate across populations and can be adapted to focus on specific therapeutic goals of renewal, personal growth, passage of time, practicing patience, coping with life's unpredictability and unexpected outcomes. Its versatility as a winter-time plant activity for all types of climates including those with snow, underscores the theme of renewal, with the passage of plant dormancy being transformed and regenerated as a new season emerges. Plant and season metaphors and themes relating to human challenges including renewal and transformation are both abstract and literal, understandable by all ages and cognitive/intellectual abilities.

ACTIVITY DESCRIPTION: Sowing seeds in winter months for renewal and emergence in upcoming season.

THERAPEUTIC GOALS:

Emotional: exploring sense of renewal & growth, focus on self-identity, self-care, well-being, life skills and needs, learning healthy ways of coping with emotions, practicing patience

Physical: eye-hand motor skills, maintaining hand dexterity, strength, & pincer grip

Intellectual: learning about vegetables, matching labels to seeds, cognitive practice of following sequential steps, discussing life's unpredictability, adversity, resiliency & unexpected outcomes

Social: group cooperative activity, teamwork, collaboration, socializing

STEP-BY-STEP PROCESS:

1. Prep: pre-wash & dry all recycled milk containers before session begins.
2. Create a suitable growing medium for planting or have potting mix ready for session.
3. Participants, where appropriate, prepare the milk container by

cutting it almost in half, opening it so that the two parts (top & bottom) are not completely detached.

4. Participants can fill containers with soil halfway up the bottom part of container & gently press the soil.
5. Leader gives directions regarding planting the seeds, referring to planting depth (on seed packet). Seed types – rye grass, radish, cabbage, kale, onion, leek, broccoli, beetroot, kohlrabi. Cover with a thin layer of soil, gently compacting it.
6. Gently water the containers so as not to disturb seeds. Use masking or duct tape to seal the two parts together at the cut line.
7. Pierce 5 holes in the top half of container to create airflow and provide optimal moisture (pierce with nail, awl, or scissors).
8. Label containers with participant's name, planting date & plant name. Read seed packet to determine days to germination.
9. Place container outside including winter season, and plan schedule for observing plant germination, growth, with possible activity extension of transplanting seeds when mature.
10. Discuss elements required for seed survival (winter temperatures, sun, water), care of seeds, passage of time & patience during germination stage, expectations for plant emergence, seasons - life cycles of planting, germination, renewal, growth & harvest. Relate these to human growth.

Materials

Recycled milk containers
Soil, potting mix
Seeds
Marker, nail, knife

THERAPEUTIC APPLICATION: This activity lends itself to therapeutic goals in all health domains. In particular, themes & metaphors related to renewal, hope, growth, care & self-care. Using different types of seeds, identifying their specific needs, and recognizing the powerlessness of seeds relative to weather conditions & other inputs can lead to discussions/metaphors for human growth, overcoming adversity & trauma, cycles of darkness followed by blossoms/growth (plant & human), sense of self & coping strategies for dealing with situations and emotions participants may have experienced.

APPLICATIONS FOR POPULATIONS: This activity can be delivered as a one-time or multi-session activity, the latter including observations of plant cycles, perhaps most effective when seed growth is apparent as mature, viable plants. It is appropriate for most populations, and for both individuals and groups. Tasks can be supervised so that all levels of intellectual abilities can participate.

SAFETY CONSIDERATIONS: Essential to check with staff and individuals before the activity to identify allergies, physical abilities, or emotional (in)stability. The use of sharp knives may not be appropriate for some populations. The option of leader doing this step during or prior to session will minimize safety challenges. Sharp objects may need to be secured and out of reach of participants.

NOTES OR OTHER CONSIDERATIONS: Knowledge of trauma or human trafficking survivor populations would be helpful, or sessions delivered in conjunction with “expert” in these fields (social worker, mental health professional). Other containers may be used where recycled plastic milk containers are not available. Creating the sealed “greenhouse” effect for condensation/watering of seeds is essential.

This activity provides for the integration of garden elements which are often missing during long winter months, with opportunities for participants to plan gardens, think about dreams, experience hope & joy related to plant growth as a path to healing & recovery. Activity can integrate elements of

food production, ethnobotany, and connections to reality through natural cycles (seasons, growth, rest).

REFERENCES/ RESOURCES:

Center for Health Care Strategies. (2021). What is trauma-informed care?

<https://www.traumainformedcare.chcs.org/what-is-trauma-informed-care/>

Poláčková, Z. (2023). Horticultural therapy with female survivors of human trafficking. *Digging In* 9(4), 4-9.

Voll-Wallace, L. (n.d.). Starting seeds in winter. *Penn State Extension*.

<https://extension.psu.edu/starting-seeds-in-winter>

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The article is being published concurrently in Nova Scotia Horticulture for Health Network's Digging In.



Horticulture for Health Update

By Kathy Carroll, BS, MS, HTR & Lesley Fleming, HTR

Photos by J. Fleming



The term [horticulture for health](#) was coined by Lesley Fleming in 2018 and is a framework that identifies areas where horticulture has a positive impact on health. It is the interdisciplinary approach across disciplines that makes the horticulture for health (H4H) framework compelling, linking different health interventions, disciplines, landscapes, and horticultural practices together in a wide-ranging mix of programs, services, and landscapes. With developments in horticulture and health services and Covid 19 spurring greater interest in gardens, registered horticultural therapist Kathy Carroll interviewed Lesley Fleming, lead for the Florida Horticulture for Health Network discussing updates on the concept and practice of H4H.

What prompted you to conceive of the horticulture for health framework?

Practicing horticultural therapy (HT), and in discussions with other practitioners, we found that there were crossover of ideas and practices that involved gardens, nutrition, and things like aromatherapy, nature therapies. These were not technically part of HT but for practicing professionals, important to understand and ultimately incorporate if appropriate. In response to a narrower view of HT, the [H4H framework](#) evolved. It seemed to reflect the growing interest and breadth of alternative and related areas within health and horticulture communities.

What is the short definition of horticulture for health?

Horticulture and health have many common connectors where services and activities have proven to have positive impact: health services that use horticulture plays an integral role; horticulture as a catalyst for social interactions; landscapes for health including gardens, parks, and schoolyards; food/nutrition/food security; and horticultural practices.

What examples can you give that demonstrates this interplay between disciplines?

In a recently published [Journal of Therapeutic Horticulture \(JTH\)](#) article, [Horticulture for Health in U.S. Hospitals: Horticultural Therapy, Gardens in Hospitals, Nutrition-led Programs & Affiliated Community Gardens](#) (2022), my co-authors W. Zhang and K. Nelson and I examined how horticulture was being used in hospital settings in these various capacities. New developments like hospital funds used for “community benefit”, food is medicine movement, and stronger community connections to hospitals through community gardens suggest ways that horticulture is integrated into health. Health

professionals - nutritionists, doctors, social workers, horticultural therapists, community organizers and food security activists have identified multiple mechanisms to use H4H improvements. And this is just one setting – hospitals.

Are there areas or disciplines where horticulture for health is better known or more often used?

The framework began within HT circles, so it is probably best known in this field. With several published articles on horticulture for health in the *JTH*, and several presentations at HT conferences, I do think HT practitioners have expanded their knowledge with the broader H4H perspective. The H4H networks that exist—[Florida H4H network](#) (FLHHN) and the Nova Scotia H4H network (NSHHN) — have many HTs but also recreation professionals, horticulturists, Extension staff and master gardeners from many countries. There is a growing number of mental health service providers who are embracing HT and H4H and integrating best practices, programs and gardens with this particular mix of disciplines in Dartmouth, NS, Lakeland, FL, and sites in California among others.

What developments have you observed in horticulture for health?



I will be giving a presentation on this topic at the 2023 American Horticultural Therapy Association’s annual conference and a live/recorded-YouTube webinar hosted by the Florida and Nova Scotia H4H Networks with the title [“Need to Know Developments in Horticultural Therapy and Horticulture for Health”](#) (October & November respectively). The growing interest from mental health professionals; their training and knowledge of self-regulation and polyvagal theory is beginning to be integrated into the HT field. An article by Fleming, Bethel & Roberts, “Self-Regulation, Its Neuroscience Foundations and Horticultural Therapy: Growing the Connections” is pending publication in *JTH* in 2023. [More expansive and informed information on nutrition](#) is being integrated into other H4H areas like therapeutic services, community and [school gardens](#), with for example, research supporting nutrition literacy in afterschool programs, interesting models of “pay as you can” farm

stands, University of Alabama Birmingham’s [Harvest for Health program](#) + research where cancer survivors are paired with master gardeners to grow food in home gardens for improved physical exercise, nutrition, food sovereignty, self-confidence and sense of control.

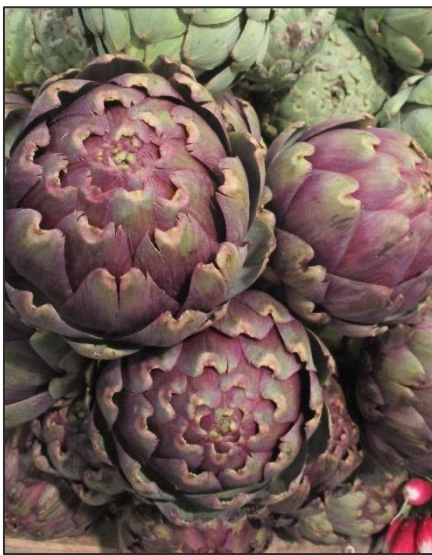
What excites you?

The amount of research that is occurring now is fabulous, and at times overwhelming when looking at the scope of H4H areas. The FLHHN’s [Resource Hub](#) has attempted to identify these, and program models, by H4H topic areas - quite a huge undertaking but this a unique repository that brings all the H4H elements together under one “roof/website”. I am excited by unusual & wild plants – hyacinth bean being promoted as solutions for food insecurity, sweet potato ice cream developed to provide nutrient-dense food, emerging professionals wanting to integrate food security efforts into HT and community garden programming, and HT programs for female survivors of human trafficking. I am excited to share the [15 YouTube videos from FLHHN](#) on interesting H4H topics.

Purple Produce

Text & photos by Lesley Fleming, HTR

Purple fruits and vegetables are nutritionally dense, rich in anthocyanins, vitamins, minerals and fiber. Their natural plant pigment makes them appealing to choose and taste. These [superfoods](#) include beetroot, purple corn, [purple sweet potato](#), figs and acai berries.



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Upcoming Issue of *Cultivate* Winter 2024:
Active and Passive Engagement with Plants: Incorporating Interoception, Proprioception &
Vestibular Senses for Therapeutic Outcomes

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