

Divergent Gardens: A Place Where Community Grows

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CNSW728A: Person/Plant/Land: Horticulture Therapy

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December 1, 2023

The global pandemic has deepened an epidemic of loneliness in America. A recent report conducted by the Making Caring Common Project at Harvard University suggests that 36% of all Americans—including 61% of young adults and 51% of mothers with young children—feel “serious loneliness” (Harvard University, 2021). Loneliness is a negative emotional experience that indicates an unmet need for social connection. People who are lonely can experience feelings of isolation, sadness, and disconnection, which can negatively impact mental and physical health, causing early mortality, depression, anxiety, heart disease, substance abuse, and domestic abuse (Campaign to End Loneliness, 2023). For the millions who struggle with social anxiety disorder, loneliness and isolation were part of their lived experience well before mandatory lockdown went into effect. Moreover, in post-lockdown society, the prevalence of social anxiety disorder is growing fast. Approximately 15 million adults in the United States are diagnosed with social anxiety disorder every year. That's more than 7% of the entire adult population (Seattle Anxiety Specialists, 2023).

This proposal demonstrates the purpose and need for funding support for Divergent Gardens, a therapeutic community garden for adults afflicted with social anxiety in the Denver metro area. The authors believe a program offering horticulture therapy interventions in a community garden space will help to alleviate symptoms of social anxiety disorder among participants. Horticulture therapy in group settings has proven to help individuals strengthen their sense of agency and discover healthy interdependent relationships (Harris, 2017). Being in contact with nature has physiological benefits such as improved brain function and nervous system function.

Moreover, relating to nature improves recovery from mental fatigue, restoring concentration. It is known to enhance positive outlook on life, social and community connectedness. And it improves our abilities to cope with and recover from stress, illness and injury. Perhaps one of the most significant benefits Divergent Gardens would provide is an opportunity for its participants to develop a more solid sense of place and a greater sense of self—replacing existential anxieties with stories of interconnection, improved health, and individual and collective well-being (Harper, 2012).

Program Mission and Structure

The mission of Divergent Gardens is to provide a safe, supported community garden setting in which participants can deepen self-understanding, develop connections, take risks, and build their self-esteem through horticulture therapy interventions. We will accomplish our mission by offering an annual 28-week horticulture therapy program from May through October to 8-12 adults, ages 20-39, who have been diagnosed with or fit the majority criteria for social anxiety disorder. This could be included in other diagnoses, such as panic disorder, agoraphobia, etc. or as a function of neurodivergence. For the one group selected each year, the Divergent Gardens program will offer consistent support, psychoeducation and eclectic interventions using mindfulness, animal-assisted therapy with chickens, nature-based metaphor and more.

Ideal participants for the Divergent Gardens program are individuals who are making strides in individual therapy and would benefit from continuing their work in a curated, supportive social setting. Participants will be selected through an evaluative process that includes an initial referral from an established network of local clinicians.

Referrals will be accepted until March of each year, with the program beginning the first Sunday in May. Once recommendations have been made, potential participants will be interviewed by the therapist conducting the group and determinations will be made as to best fit for the group by the first week in April each year. Returning participants will be given priority placement in the program.

The 28-week program will consist of 4-hour meetings every Sunday (except national holidays) afternoon from 12-4 p.m. The program will be overseen by resource personnel that will consist of a licensed therapist and at least one garden manager, though an intern or volunteer could also participate if they're able to commit to attending the majority of meetings. The priority is to maintain the ideal ratio of no more than 5:1 participants to resource personnel. The authors believe that while it's very important to have consistency in the group structure, there could be therapeutic benefit to working with how a new volunteer entering the group may affect the equilibrium.

The garden manager will oversee the grounds and manage the calendar for planting as well as plans for crop rotation. The therapist will be responsible for interviewing potential participants, overseeing the programming, and administering evaluations.

Program Evaluation

The program outlined in this proposal will be evaluated on a consistent and thorough basis. The authors will develop an assessment questionnaire that we will administer informally in conversation as well as via email each month of the program's active cycle (May-October). Efficacy of the program will be determined by combining the

results of the written and verbal assessments to look at changes in individual participant and group health over time. We will take intervention and programmatic feedback into account when planning for the following year, articulating to participants how their feedback is being utilized for improvements, and what those improvements will look like in the upcoming program cycle.

Program Status and Funding

Divergent Gardens will operate as a nonprofit organization, and will establish 501(c)(3) status with the state of Colorado. Funding for the program will be secured through private donations, crowdsourcing, and grant awards (see Appendix A). Initial funding will be divided between material costs and a small stipend (\$1,000 each) for the therapist and garden manager. Thereafter, as program success is proven and funding increases, the stipend for the therapist and garden manager may increase accordingly, (up to \$5,000 each) not to exceed 5% of the budget. The garden space will be cultivated over time as funding allows with the projected goal of total development by the fifth year of the program. With some available grants requiring increased community access to nourishing food from the garden, a possible program development opportunity exists in creating a low-cost farm stand that would be staffed by participants, allowing them more opportunities for meaningful social interaction.

Program Design

When creating this group, the authors are keeping in mind that the “therapist who leads the group must provide the structure, support, and supervision necessary to allow for exploration and change, while simultaneously giving a sense of freedom” (Haller,

Kennedy, & Capra, 2019, pp. 182). To begin with, something that is important with this population is to create an environment of consistency and allow the group to orient to the environment. As the program progresses and confidence and resources (such as self-regulation tools) begin to feel more accessible to participants, the intention is to emphasize the idea that this program is a safe place for individuals to expand out of their comfort zones and take risks. Practicing the expansion and use of skills will likely aid the group in self-empowerment and prepare them for the world outside the group. As the group grows and changes, adaptations will be made to best address what is most needed in the here-and-now.

Therapeutic Interventions

Psychoeducation: An important therapeutic intervention we plan on using throughout the program is psychoeducation. Psychoeducation comes with many benefits and aims to empower individuals by increasing their understanding of mental health issues and promoting self-help and coping strategies. This helps increase awareness, gives the participants more agency, starts important discussions, and ultimately helps people better understand themselves and others.

Resourcing Interventions: We plan to provide a large list of resourcing interventions to the group. This list will consist of some go-to interventions (see Appendix B) as well as any additions that group members report work best for them. We plan to have these tools available in a handout as well as a visible sign on poster board within the garden space. The participants will be informed what the interventions are and why they are helpful. It would be helpful for each individual to identify 2-5 easily accessible interventions that work best for them, making it easier to choose at the moment

resourcing is needed. The more repetition and practice with these interventions, the more likely the participant is going to remember to do it on their own and the more likely they will create a body memory of shifting states. This practice will assist the participants with titration.

Mindfulness: Mindfulness is another powerful tool that can assist our population. There is a wide range of potential mindfulness interventions available with our horticulture program. “According to Kabat- Zinn (1994), the origins of mindfulness have always focused on observations of nature and discovering the intricacies of life with a deep appreciation. This was incorporated through practicing rituals of planting and harvesting to identify the natural process of plants which provided concrete examples of life, growth, change, and death” (Monroe, 2015). One specific example is that the therapist can guide the participants in a mindful observation of the garden, visiting the different plants and having them tune into their senses: smell, taste, touch, and sight. Incorporating mindfulness practices will assist with regulation by orienting clients to the here and now.

Gardening: “Simply being around plants can reduce stress and improve or restore cognitive abilities” (Haller, Kennedy, & Capra, 2019, pp. 117). Moreover, participating in hands-on gardening, such as planting, weeding, and harvesting, can provide a sense of accomplishment and purpose. Clients can see the tangible results of their efforts. Additionally, for those who participate in the physical activity involved with gardening and garden maintenance, there is a benefit of mitigating stress and reducing high cortisol levels.

Flower Pressing: In flower pressing, the therapist serves as a guide, introducing the activity and its potential therapeutic benefits. They facilitate emotional support, encouraging participants to engage actively in the selection of flowers, herbs, leaves, or other garden plants. The therapist adapts the flower pressing process to individual needs, providing guidance and observing participants' reactions to assess their emotional well-being. The participants exercise agency by choosing plants, engaging in the preservation process, and arranging the finished product. This creative expression serves as a concrete example of how personal processes can yield meaningful outcomes, fostering a sense of accomplishment and trust in the therapeutic journey. Each pressing becomes unique to the individual, reflecting their choices and emotional experiences. The therapist encourages reflection on how the pressed flowers can be used as a resource in the future. Participants may explore gifting their creations to loved ones or incorporating them into cards as a tool for connection. In doing so, the sentiment and thoughtfulness behind the intentional act of flower pressing become a powerful means of expressing care, transcending verbal communication barriers. This shared experience, guided by the therapist and actively participated in by individuals, reinforces the therapeutic potential of flower pressing as a creative and connective horticulture therapy technique.

Animal-assisted therapy with Chickens: We plan to incorporate care for and therapeutic interaction with chickens in our program. Participants will interact with the chickens in different therapeutic capacities. In an article about how chickens benefited a community in South London, chickens were accredited to have a positive effect on community mental health. The chickens provide a lot of benefits to the people who

come to the garden to relax and enjoy the activities. “They’re really good for everyone taking part,” says David. “They’re soothing; they calm people down and reduce anxiety. They get people engaged in projects and provide a distraction from their troubles. They’re also sweet and cheeky. People find it easy to bond with them.” (Kearley, 2022). One of the most valuable benefits that chickens provide is the opportunity to titrate. Chickens are also relatively low-maintenance and low cost.

Additional Interventions

Additional horticulture activities specific to the Neurosequential Model of Therapeutics (NMT) functional domain can be used as the program adapts the flow and function of the group and/or individual needs. This list is valuable when looking for resources to adapt to what is felt best in the here-and-now of the program. This includes sensory integration, self-regulation, relational functioning, and cognitive problem-solving (see Appendix B).

Program Benefits

There are benefits to our horticulture therapy group that apply to the program as a whole that go beyond what is listed with each individual intervention. One of the major benefits of horticulture therapy, specifically for this population is the beneficial human-plant relationships that can result in connection. “Social neuroscience provides us with the evidence that we are structurally wired for connection to others. Horticulture therapy is predicated on the recognition that this includes our relationship with plants. This challenges the human exceptionalism narrative that humans are separate and isolated” (Haller, Kennedy, & Capra, 2019, pp.133).

There is a great opportunity to work with challenges during the horticulture sessions. Working through these challenges “naturally leads to increased self-esteem, increased comfort and flexibility with materials (for example, if the client’s challenge is being contaminated by “dirty” soil), increased problem-solving skills, and an even deeper understanding of how a mental health diagnosis affects life functioning.” (Haller, Kennedy, & Capra, 2019, pp. 182).

Our program incorporation of horticulture therapy also provides a safe space to process. It offers the ability to process while not being alone and with access to a therapist. “Even when plants languish with lack of care or succumb to the vagaries of weather or neglect, a clearer mind may help individuals face memories triggered by these smaller losses. A calming connection with plants can allow safe expression of emotions such as anger, grief, and sadness. These feelings can be processed with the help of a horticultural therapist” (Haller, Kennedy, & Capra, 2019, 117).

Additionally, the opportunity for social contact exists within the container held by the group leader, and a set of norms that provide structure and allow participants to take social risks and strengthen social ties. This may provide the opportunity for social resilience to the participants from loneliness and isolation.

Therapeutic Location

A garden design team needs to make many considerations for improved inclusion and access. The space adjacent to a Swedish rehab clinic was used by patients with brain damage in one study of the efficacy of horticultural therapy with that neurodivergent population. Their results show that “horticulture therapy mediates emotional, cognitive and/or sensory motor functional improvement, increased social

participation, health, well-being and life satisfaction” (Söderback, Söderström, & Schäländer, 2004). Where tool selections are concerned, the authors recommend decisions be based on principles of occupational-therapy ergonomics; as light as possible, replaceable handles for customizing fit, allowing for the lowest possible workloads, and optimal biomechanical body positions. Specific therapeutic purposes of the space were also considered before implementation: mental healing, recreation, social interaction, sensory stimulation, cognitive reorganization, sensorimotor function, assessment of skills, and teaching of ergonomic body positions.

Included as Figure 1, a whiteboard drawing which will be referenced throughout this section. The design sketch was based partially on experience of Loveland Youth Gardeners’ Good Enough Farm (Figure 2), as well as the architectural rendering provided with the write up from Söderback, Söderström, & Schäländer, (2004, p. 251). It was not intended for a specific scale, though some attention was paid to relative size of garden elements. Each of the buildings near the top of Figure 1 were imagined as 8’x16’, with an 8’ berth between buildings, so a roughly 40’x80’ plot would allow for the design as shown. This provides one of the key elements for outdoor gardens, ample transitions between differing spaces, as described in the Therapeutic Model chapter by Irish & Young (Haller, Kennedy, & Capra, 2019, pp. 175-218).

Centered over the main gate to the fully fenced garden is a pergola supporting any number of possible leafy crawling vines and/or flowers. This bold facade also allows for plenty of room to hold unambiguous signage to aid any visitors with cognitive or visual impairments in arriving. Clear signage should also be used throughout the garden

as an aide to any visitors who struggle with orienting to spaces they inhabit. Such aides also offer consistency and familiarity to visitors, even in the off-season.

Immediately to the left or right of the entrance are the tool shed and an aquaponics greenhouse. All of the main pathways are accessible to mobility device users, with minimal transitions between masonry, flagstone, packed clay, etc. If the plan were to be implemented on a sloped property, care would also need to be taken to ensure minimal grades on any path mobility device users travel. Some of this concern may be addressed through permaculture approaches to water and other resource management; building berms for controlling the flow of precipitation falling on the garden may coincide with grading slopes for the best possible access.

The next feature, as we continue to scan down Figure 1, is a row of variable height beds allowing for dynamic ergonomic needs and/or mobility devices. Beyond those beds are more traditional rows of produce and decorative plants surrounding a communal gathering space, a circle of stones or cob furniture centered within the garden. More plant rows end with another row of variable height raised beds, beyond which is an enclosed, shaded chicken run terminating the far end of the plot. Inside the large enclosure with shade-loving and chicken-friendly plants is another 8'x16' building, the coop. Fencing and vertical gardening are suggested along any remaining aspect of the plot's perimeter. This affords some sense of security through controlled access to the garden, as well as optimizing resource utilization in more experimental plantings.

While trees are not represented graphically in Figure 1, as they were in Figure 2, they are strongly encouraged surrounding and within the plot to encourage systemic benefits afforded in forest gardens. Minimal attention to furniture for gathering in passive

garden pursuits is depicted, though the drawing also suggests regular flows of design elements which take well to interruption via benches, tables, etc. Also left out of the drawing are spaces for supplies like mulch and compost piles (shown just outside the fence at Good Enough Farm). These might be included within a plot, or left outside the gate, depending on design aesthetics and civil codes in any given location.

While any fencing encountered during our site visits for class was often unencumbered (e.g., allowing for clear lines of sight through chain link), the recommendation to add in vertical grows was offered in support of clients who may find themselves too distracted by movement beyond their primary focus area. It also affords more opportunity to make use of the garden as a refuge, sitting out of sight, in a space built for mindful, meaningful, and quiet activity (Haller, Kennedy, & Capra, 2019, p. 212). Public access to a sale stand (as offered at Good Enough Farm) was left out of the new design, also minimizing distraction within the garden, to minimize the number of unknown and/or unexpected visitors while in session. If visibility through the fences is largely blocked by growing plants, trees surrounding and within the plot are even more strongly recommended. Branches reaching over the fence to shade spots within the garden would allow visitors to look beyond the wall built to minimize visual distraction, opening up options for biophilia engagement through drawing attention up and over the protective barrier and allowing for relaxing one's gaze on a long view toward more distant landscape elements.

Figure 1

Design whiteboard depicting layout for "Acre Adventures: A Therapeutic Garden".



Figure 2

Loose representation of the garden and grounds surrounding "Good Enough Farm".



References

- Haller, R. L., Kennedy, K., & Capra, C. L. (2019). *The Profession and Practice of Horticultural Therapy*. CRC Press, Taylor and Francis Group.
- Campaign to End Loneliness (2023, November 25). Facts and Statistics about Loneliness. [Campaigntoendloneliness.org](https://www.campaigntoendloneliness.org). Retrieved November 25, 2023, from <https://www.campaigntoendloneliness.org/facts-and-statistics/>
- Harper, N. J., Carpenter, C., & Segal, D. (2009). Self and place: Journeys in the land. *Ecopsychology*, 4(4), 319-325. <https://doi.org/10.1089/eco.2012.0060>
- Harris, H. (2017). The social dimensions of therapeutic horticulture. *Health and Social Care in the Community*, 25(4), 1328-1336. <https://doi.org/10.1111/hsc.12433>
- Harvard University (2021, February 1). Loneliness in America: How the Pandemic Has Deepened an Epidemic of Loneliness and What We Can Do About It. Making Caring Common Project. Retrieved November 25, 2023, from <https://mcc.gse.harvard.edu/reports/loneliness-in-america>
- Seattle Anxiety Specialists, PLLC (2023, February 25). Exploring the Recent Rise of Social Anxiety Disorder. [Seattleanxiety.com](https://seattleanxiety.com). Retrieved November 25, 2023, from <https://seattleanxiety.com/psychiatrist/2023/2/24/exploring-the-recent-rise-of-social-anxiety-disorder#:~:text=Not%20only%20is%20social%20anxiety,about%207.1%25%20of%20the%20population>
- Söderback, I., Söderström, M., & Schäländer, E. (2004). Horticultural Therapy: the 'healing garden' and gardening in rehabilitation measures at Danderyd Hospital Rehabilitation Clinic, Sweden. *Pediatric Rehabilitation*, 7(4), 245–260. <https://doi.org/10.1080/13638490410001711416>
- Monroe, L. (2015). Horticulture Therapy Improves the Body, Mind and Spirit. *Journal of Therapeutic Horticulture*, 25(2), 33–40.
- Kearley, A. : S. (2022, August 3). *Naughty chickens help people with mental health problems in London*. Backyard Poultry. <https://backyardpoultry.iamcountryside.com/chickens-101/mental-health-and-chickens/>

Appendix A

Available grants and program funding sources

National Garden Bureau Therapeutic Garden Grant

National Garden Bureau promotes the health and healing powers of human interaction with plants through a yearly grant program for therapeutic gardens.

<https://ngb.org/therapeutic-grant-program/garden-grant-application/>

Colorado Garden Foundation

To date Colorado Garden Foundation has awarded more than \$12 million to fund horticulture related grants for the benefit of the state of Colorado! Projects that have been awarded in the past include greenhouse projects, community gardens, therapy gardens, and so much more!

<https://www.coloradogardenfoundation.org/about/grants/>

Hazel Herring Civic Improvement Grant

This grant was established in 1983 through a donation made by Mr. Jack Herring in honor of his wife, Hazel J. Herring. Mrs. Herring served as WNF&GA president from 1982 – 1984. The grant may be used to assist Branches or Divisions implementing their civic beautification projects.

<https://wnfga.org/scholarships/grants/hazel-herring-grant/>

Seed Money

Seed Money is a nonprofit that helps food, farm and garden projects by offering grants and free assistance with online fundraising and garden planning.

<https://seedmoney.org/>

Fruit Tree Planting Foundation

FTPF programs strategically donate orchards where the harvest will best serve communities for generations, at places such as community gardens, public schools, city/state parks, low-income neighborhoods, Native American reservations, international hunger relief sites, and animal sanctuaries.

<https://www.ftpf.org/apply>

WalMart Foundation

WalMart local community grants are awarded through an open application process and provide funding directly from Walmart and Sam's Club facilities to local organizations in the U.S.

<https://walmart.org/how-we-give/local-community-grants>

Jane Goodall Foundation - Roots & Shoots

Young people, educators, individuals, and group leaders based in the U.S. are invited to apply for a \$250 grant to start, support, or celebrate their community-action project!

<https://rootsandshoots.org/take-action/find-funding/>

Appendix B

A list of some go-to resourcing interventions

Below is a list of some resourcing interventions that can help with regulation. Not all resourcing interventions work for all individuals, some may even be activating. Find what works best.

Create personal resource list

- Internal: Anything about “you”, i.e. my humor, my work ethic, etc.
- External: People, places, things that are supportive and/or calming
- Spiritual/Transpersonal: Anything that helps you feel a greater sense of expansion, love, connecting, yoga, religion, meditation, music, nature.

Focusing on the breath

- Spans our conscious and unconscious parts of our brains.
- It's something we can control that impacts our physiology.

Feel the ground

- When our body feels the ground, it sends an implicit, unconscious message to our whole being that there is a ground beneath us and that there is something holding us.
- That we are not floating up in the air.
- With trying to get out of our bodies, there is more safety that comes from being grounded in this way.
- Imagine roots going into the ground (breathing).

Look around - move neck, spine, eyes

- Tells our bodies that we are not frozen and that we can move, which brings safety.
- Looking helps us orient ourselves to where we are now.

Look around room or space to connect with sensory experience

- Senses are on our periphery and often less triggering to senses on our core.
- Our senses are often places we can find pleasure in our relationship with.

Tapping "This is my" (body scan practice)/ body scan

- Any type of body scan (with sensitivity to trauma triggers).
- Saying/thinking “this is my hand” while squeezing.

Making the "voo" sound

- Vibrates organs and the vagus nerve.
- Calms the nervous system.

Push, move, express

- When the activation is so much, to try to “be calm” or “calm” is really activating, move!
- “Is today a moving day or a breathing day?”
- Pushing
 - Against a wall
 - Really big body stretch
 - Breathing with strong exhale
 - The energy gets to sequence
 - Move the things that are being held in, out
 - When things move out: natural exhale and release

(Katie Asmus, 2023)

Appendix C

Additional list of horticulture activities specific to the Neurosequential Model of Therapeutics (NMT) functional domain.

Sensory integration: Multisensory garden walks; weeding and watering; shoveling, digging, and raking; aromatherapy, flower arrangements; picking and grinding herbs; garden meditation and bilateral movement.

Self-regulation: Handicrafts, tool building, weaving, playing with soil, barefoot garden projects, breaking apart and putting together garden; hauling, lifting, sifting soil and rocks; pushing a wheelbarrow, building walls; building and deconstructing garden beds; music in the garden, rhythmic activity.

Relational Functioning: Nursery care, tree and animal husbandry, earth art, symbolic garden projects, planting, harvesting, fertilizing, garden ceremony, ritual, festivities, cultural sharing, storytelling, ethnobotany, paired/small-group gardening projects, garden games, competition, celebration.

Cognitive problem solving: Natural science, botany, irrigation, composting, grafting, pest management, companion planting, square-foot gardening, following a planting/ harvesting schedule, project management, experimentation, vertical gardens, hydroponics, aquaculture fare markets, and garden recipes.

(Haller, Kennedy, & Capra, 2019, pp. 138)