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Therapeutic Gardening for Mental Health in Substance Use Recovery

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NURS 653: Internship

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Abstract

As the clinical nurse leader (CNL) in this project, I used the “[CNL] Essential 1: Background for Practice from Sciences and Humanities” (Competencies and Curricular Expectations for Clinical Nurse Leader Education and Practice, 2013) and its competencies to focus on designing nursing care for a clinical or community-focused population based on biopsychosocial, public health, nursing, and organizational sciences and to synthesize evidence for practice to determine appropriate application of interventions across diverse populations. With the help of the CNL competencies and collaboration with the healthcare team, we created and implemented a therapeutic garden for residents in a substance use recovery program and taught them lessons in many facets of gardening and specific ways to take care of their social emotional well-being throughout life (Competencies and Curricular Expectations for Clinical Nurse Leader Education and Practice, 2013).

Statement of the Problem

Growing up on a farm in Oregon, I was able to spend a glorious amount of time outside and so have foundational knowledge of the benefits of the outdoors and yet I have chosen to work in a field which is nearly all happening inside four walls. This is the way it has always been and yet until I had the opportunity to work with Psychiatric Emergency Services at San Francisco General Hospital (SFGH), I didn’t fully realize the detriment that is wrought on mental health patients housed in an indoor facility 24/7. From my microsystem analysis of the psychiatric unit at SFGH, I noticed that healthcare needs more tools for patients to learn and have at hand throughout.

Adults who must function under the strains of a variety of mental health issues are bereft of nearly all time outdoors while in the care of mental health services. Why is this? Their ability
to breath fresh air, feel the wind on their face and invigorate their bodies to want more of the same is nearly non-existent. They suffer in the darkness and overwhelm of their minds while suffering in the darkness and overwhelming dullness of their indoor environment.

Gardens are one of many ways to solve a myriad of these issues. At baseline, patients could be allowed to wander outside in a well-kept garden for two or three breaks per day. Following that, they could move on to working in the garden with low-risk tools. Moving up the garden advantage ladder, patients could begin to work with staff and gardeners to improve the grounds by shoveling, raking, and weeding. Time and energy spent sweating on their hands & knees could potentially reduce their dependence on a variety of medications. Planting a seed and watching it grow would bring a sense of accomplishment and trust in themselves that they are capable of caring for themselves and things beyond themselves. On their way to an improved sense of self, it could also fill a need for feeling safe, feeling needed and feeling accomplished.

**Literature Review**

The aim of my CNL project was to engage clients of a residential substance use recovery program in therapies related to gardening and enjoying the outdoors. The project was conducted in a 32 bed substance use recovery facility located in the scenic, fertile foothills that surround the San Francisco Bay area, making it the perfect place for a garden. The program serves adult males who have been previously involved in the criminal justice system who primarily receive medical coverage through Medicare and Medi-Cal. During their stay, which ranges from 30 to 90 days, clients learn about a variety of treatments and therapies through didactic lessons to remain sober and regain control over their lives. Much of the programming encompasses indoor group meetings with few opportunities or incentives to get outside. Many clients have previous work experience in construction, landscaping and other related sectors.
For the literature review, I used general search terms such as “therapeutic gardening” and “substance use therapies in the garden” to help source evidence-based practice (EBP) and evidence-based research (EBR). The body of literature related to this project was deep and yet long-term studies with concrete and qualitative data was difficult to come by. Ethnographic observations do not lend themselves to the creation of measurable comparative data samples and yet this type of study shines in favor of reaching the clients where they are.

The basis of our approach is the growing body of literature highlighting the significant effects of “green care” in promoting recovery as evidenced by Grabbe et al, in which they found that offering stress relief and elements of social inclusion and self-actualization allowed for time and quiet which could interrupt participants’ negative ruminations by their work in the garden (Brown et al., 2021 p 141). These findings correlate with our project aim to empower patients in the Substance Use Treatment Services program with effective coping strategies that would enhance their recovery through therapeutic gardening. Studies show that residents enjoy the new skills they are learning, increasing their work ethic, as well as their hope to gain meaningful employment upon release (Jauk-Ajamie & Blackwood, 2022 p 4).

Literature suggests that participating in community gardens reduces stress, encourages nurturing characteristics, builds social networks and enhances social capital, and improves emotional well-being. A review of allotment gardening further found that gardens can provide a stress-relieving refuge, promote a healthier lifestyle, and enable self-development. Gardening has also been seen to decrease stress including decreased salivary cortisol (Johnson-Jenning et al., 2020 p 882). This research pinpoints directly the EBP that we sought to align our project with. It was surprising to find that a relatively benign activity could lead to such long term and thoughtful experiences. The experience for the clients in this fresh, new world was not benign,
however. Many of them value the time at this specific treatment center and yet lacked the incentive to go outside, despite being able to see it from most of the rooms in the building. They reported not enjoying the long hours indoors and yet were unable to create a path to that outdoor experience their minds and bodies longed for. It should be mentioned that California experienced one of the wettest and longest winter seasons in decades over the course of late fall 2022, through winter and into early spring 2023. As I write this on May 8, 2023, it is raining again, dreary and grey as any December day might have been.

Opportunities to get outside and breath the fresh air of the location they were in were limited most by the residents’ ability to know “what to do” when they got there. Like a toddler encountering the park or a lake for the first time, the clients were at the edge of something great but lacked the knowledge and perhaps the questioning drive to figure out what to do next. The garden project was very nearly perfect for this reason alone but with the added benefit of such a lush and inviting location, success was inevitable. It nearly goes without saying then, that gardening can be a venue for transmitting ancestral knowledge and stories, increasing social relationships and social teachings, reconnecting with mother earth and increasing cultural identity. Furthermore, space and place also become quite important within gardening, as the most effective space to share cultural knowledge is the place in which that culture developed (Johnson-Jenning et al., 2020 p874). It is in our ancestral make up to be outside in the comfort of mother nature but also those that we care about. Sharing who we are and creating new connections, not only with others but also within our own minds allows for new methods and processes of navigating our own mental health to form. Not only does the aspect of nature provide positive sensory experiences and enhanced wellbeing, physical and psychological, but the symbolism of nature which is associated with personal growth and the passing of time (Adevi
Therapeutic Gardening for Mental Health in Substance Use Recovery

and Martensson 2013) can be beneficial for people undergoing any form of therapy (Brown et al., 2021 p 142).

The literature review also reveals supporting responses from various studies of therapeutic gardening and the improvement of mental health for nearly any client group. It has been shown consistently that horticultural therapy improves decision making skills and allows for a sense of control and empowerment over ones environment (Tu 2022, p 604). Creating the garden as a tool for the improved well being of the clients is really a sublime variation of tool, as it becomes one which they can potentially use without consideration as a tool but rather a thought or feeling when thinking of gardening or a way to live harmoniously with the land or even the gathering of seeds from a cantaloupe for a windowsill garden. None of these are “tools” in the absolute form of utility but rather a way to facilitate well being upon horticultural activities which are based on the biophilic tendency among humans to be in touch with plants and natural environments (Tu 2022, p 604).

The move away from negative emotions and reduction of feelings of depression and anxiety produces a feeling of distancing from daily life, which is critical in promoting mental health and reducing mental fatigue (Tu 2022, p 604). It allows clients to move up the ladder, so to speak, and take steps to improve their overall health without a great cost. Feeling admiration for oneself after doing work in a garden is a holistic process which is not easily measured and yet can provide a foundation for lifelong mental wellness.

**PICO Question**

How can gardening and outdoor activity act as a supplemental tool for adult males with a history of substance abuse who have been impacted by the justice system while seeking treatment in a microsystem where no such project has been implemented before?
Informing the process around PICO question formation was the underlying desire to create an environment where individuals could be exposed to a broader selection of tools to choose from in order to aid them in their recovery process. The typical substance use recovery environment is, nearly without exception, located inside four walls with uncomfortable furniture, minimal activities beyond group meetings & therapy sessions and beholden to décor created by prior residents whose thoughts and processes, meant to inspire, now merely hang in faded tribute along the walls.

We sought to invigorate and energize not the space between the walls of the residence nor the walls of the mind of the residents but rather to release them all from the encumbrances of their current frames of mind and allow them to experience the cold wind on their faces, the hot sun on their backs and the muscle aches after a day of hard work. With this environmental foundation secured, we forged ahead and relinquished boundaries on nearly all accounts and changed the lives of, if no one else in the group, ourselves.

**Data Source**

After surveys had been reviewed and ethnographic observations made, it was determined that the majority of participants reported that they had been positively impacted and looked forward to participating in the garden project each week. Participants were often seen smiling, laughing, singing along to music and even dancing while working together in the garden.

A lived experience of the garden is one of the most formative examples of support for the basis of our approach. The findings of our work reveal what Missen et al discovered this as well, stating that participants enjoyed doing activities in the garden, which they perceived as meaningful and gave them a sense of achievement (Missen et al., p 500). In addition, they found
that being with a group of individuals having had similar experiences of addiction helped in building social connections. This shared experience allowed participants to open up and be honest to other individuals in the group and not feel judged for their addiction and their usage (Missen et al., 2021, p 498).

An exit interview with one of our clients reflects this as well; “It helps me see life in a different way. Sometimes talking doesn’t work for me, taking action and doing something positive is something I value. I also really like the teamwork aspect and being able to work with others towards something bigger.” A quick 5 question survey was given to clients at 4 separate intervals during the project to assess for agreement with purposes of the project. Across the 17 weeks of the project and the 15 weeks that we were onsite working with the clients in the garden, agreement with the statement “Has your mood improved after gardening?” was consistently highest across the project timeline (Appendix I). Additionally, clients agreed across the board with the statement that “I learned something new today” and “Being outside in the garden makes it easier to cope with my cravings.” (Appendix I).

**Project Overview and Rationale**

We aim to equip patients with coping strategies to help aid in the recovery process through therapeutic gardening the Recovery Center Substance Use Treatment Services (SUTS) program. The process begins with a needs assessment on the participant’s current coping skills. The process ends by reporting that they will implement these coping strategies upon graduating the program. They can relapse by its a lifelong tool that they can revise in times of crisis. By implementing this process, we expect to prevent addiction relapse, improve disease awareness, improve mental health, and gain life skills for coping. It is important to address this issue in a timely manner because many individuals in this population are not aware that
substance abuse is a disease and therefore, they don’t know how to deal with this condition. Therefore, with therapeutic gardening as an intervention to approve addiction recovery we aim to reduce relapse in recovery, ensure adequate knowledge about the addiction, improve well-being, and competency. Additionally, our patient population has previously expressed an interest in outdoor activities and yet been unable to successfully implement them, further reinforcing the importance of our approach.

**Methodology**

Lewin’s three-stage change theory (as cited in Kritsonis, 2011) was utilized in this quality improvement project. This change theory was important in order to “break down” and “dismantle previous mindsets” in order to be successful. This theory helped us to set our work upon the foundation of educational interventions and weave them into all aspects of our project.

During the unfreeze phase, we let go of our old habits, values, attitudes, and behaviors. First, connections were made between the program director at the recovery center, the University of San Francisco School of Nursing and Health Professions director and I interviewed the nurse manager and my preceptor about the project to get their insights and perspectives. Second, I spent 45 hours onsite assessing the grounds and researching the county-imposed limitations on what could be implemented and reading through current teaching plans and cognitive behavior therapy teachings to see what was currently being taught and how to integrate garden therapy work into that framework.

I also asked questions (Appendix A) of the clients to see what their current thoughts and experiences are and those who work in the kitchen and facilities to find out what garden crops and quantities would be most useful for meal planning. Then I had the chance to implement both the garden plans and the curriculum that had been created. Working with my preceptor to assess
the timing for implementation and the responses by the clients I was able to make crucial but modest adjustments to the plans prior to implementation. From there, it was time to get to work.

The change phase was next. I had identified the needs of the project and shared my findings of the need for a secured space for a garden to flourish and curriculum for the residents to learn from. I educated the staff on the plans and how garden and outdoor time would offer some respite from the constant and potentially claustrophobic work and time they spent indoors. Simply spending time in a garden or access to views of the garden has been shown to reduce depression, anxiety, blood pressure and even aggressive behavior (Jauk-Ajamie & Blackwood, 2022 p. 5). My aim was to create a place where all residents and staff could enjoy a break or stretch in the sun or follow the patterns of the rain and notice that there are much bigger things going on in the world. This may help them notice that change is inevitable and to not be afraid to notice when it needs to happen, in themselves or in nature.

At the final stage, the freeze stage, I reinforced the things we had been working on for weeks. The residents had learned how to stretch and how to build a fence or a gate or set a post in the ground. They had heard a bit about nutrition and eating healthy and a lot about which plants to plant. We taught about the watering schedule and reinforced the importance of it with weekly reminders. Putting this on the chore list is one of the most important things we will accomplish. Residents are not familiar with stepping out of their comfort zone of therapy treatment and day to day needs. Grabbe et al. (2015: 258) found that gardening activities interrupted “participants’ negative ruminations, offering stress relief and elements of social inclusion and self-actualization.” (Brown et al., 2021 p 141). Addiction behavior doesn’t allow for time spent on anything other than feeding the addiction and studies have also found that the ability to tend to the growing process and see results increases self-esteem (Aldridge & Sempik,
Watering plants and noticing when they might be getting dry over the course of several days of spring sunshine or cutting back on watering due to epic amounts of rainfall is not at the forefront of their minds. Shifting them out of the addiction pathway and onto a growth mindset provided a huge shift in the project gaining traction both for the garden itself and the residents.

Next came the change phase. After I identified the root causes of the problems (see Appendix B), I shared my findings and plans with the program director, the clients and the kitchen staff. I educated the clients on specific garden projects which needed doing and presented lessons correlating their work around cognitive behavior therapy with tools for self-care through the lens of gardening and spending time outside. My aim was to foster awareness of the benefits of spending time outside and finding moments of peace with creating a space for them to enjoy and work in while realizing the benefits and potential long-term stability that these frameworks can provide. I talked with the residents and the directors and faculty at the facility to help change the culture of the program for continued positive outcomes.

At the final stage, or the freeze phase, I stabilized and reinforced the new behaviors, attitudes, and values by encouraging residents to pause often and remember to breathe and reorient their thoughts and to find calm often throughout their days. It was important to provide clients with small ways to remember to how to find calm, and those lessons were well woven into the garden work. They could easily see the garden and their hard work and conjure up small memories and goodness of their participation, reorienting them to stay the course and resist the urge to use. We also thanked everyone for supporting this quality-improvement project with a well attended garden dedication ceremony. Current residents and those who had graduated along
the months our project was in place attended as well as inspiring members of the substance use recovery community.

The most important element in this phase, and in this project, was the continuous reeducation carried out by the program directors, therapists, and kitchen staff to hold the clients accountable for the hard work they had done so far.

To evaluate the project’s effectiveness, I presented a final survey to assess changes in thoughts and feelings before, during and after the change and interviewed several staff members and clients to receive feedback (Appendix A).

**Microsystem Assessment**

Our work for this project was completed in a half-acre yard filled with 3-foot-tall weeds, one shade producing tree and four spindly and awkwardly placed trees that could not be moved. The space receives full sun, minus the shade tree, and also full rain and wind. There is no buffer other than the low-slung buildings which house the residents and the kitchen to protect the garden-to-be from any of these elements.

We worked at a 30-bed mental health-informed residential substance use treatment services (SUTS) program. The program is in place to prepare residents in beginning a new phase in life, knowing that substance use and mental health issues have likely created challenges in many facets of the lives of residents. The belief that recovery starts from within and is motivated by the hopes and goals of each of the residents is their foundational purpose. The work done by residents is to support them as they stabilize their symptoms, connect with others, learn about themselves and their strengths, and gain the skills needed to prevent relapse and recidivism, and recover their health, hopes, and dreams. While in residence at the voluntary admission residential substance use treatment facility, they will find a safe, respectful environment and a warm,
welcoming staff of clinicians, psychiatric prescribers, nursing staff, and peer specialists to help residents on their path. Each residents’ recovery plan starts with their desire to do the work. Upon their arrival, staff will work with them to do an in-depth, individualized assessment, and create a recovery plan that helps them to resolve their current crisis and move toward the goals that matter to them. Our culture is based on recovery and the staff believe in respect and non-judgment, and they celebrate individual uniqueness. Interpersonal relationships are developed to foster a supportive program setting.

Residents of are men over the age of 18 whose lives have been impacted by substance use. Admission criteria include adult male residents of Santa Clara County, aged 18 and older, who are leaving the criminal justice system, are in need of substance use disorder or co-occurring disorder services and meet medical necessity criteria. Services include, but are not limited to: psychoeducation, relapse prevention groups, individual and group counseling and therapy. Additionally, case management, medication support and Medication Assisted Treatment (MAT) are offered. Weekly family groups and individual family counseling sessions, physical health screening, counseling and care coordination are all part of the day-to-day experience for residents. These components support the overall physical and mental health of each resident, and aide in helping them create new pathways not only for themselves but also assist their families in supporting them long term.

When residents are ready to graduate and exit the program, comprehensive discharge and aftercare planning are implemented. This ensures they have the knowledge and foundation for support once they are out in the world and helps to prevent relapse into old habits. Gardening has also been shown to reduce recidivism, offer valuable job and reentry skills, and aid in rehabilitation if connected to meaningful educational programming (Jauk-Ajamie & Blackwood,
The education we have been able to provide in terms of garden planning and implementation, tools for finding strength in their own mental health and ways to calm themselves are all part of the long-term benefits of the work we have done. Additionally, and perhaps most important, are the “in the moment” tools that they have learned in their work with cognitive behavior therapy. These include but are not limited to; pausing to breathe when feeling overwhelmed, keeping a journal, reaching out to a trusted friend or family member who can support them in the moment and a list of numbers on a wallet card, to call in times of need.

**Timeline**

There is a growing body of international evidence for the use of gardening group work as a therapeutic medium, with numerous health benefits demonstrated, such as improvements in self-confidence, self-esteem, sense of accomplishment and productivity (Sinnott & Rowlis 2021, p.96).

As Clinical Nurse Leaders, we are trained to take a birds eye view of a situation related to a microsystem and within it find the source of any of a number of issues that might be resolvable through a systematic approach leading to a cumulative and measurable result. The project we established and did our work on contains few, if any, of these precise objectives and yet suffers little for its adherence to the constrictions of our assigned project. To wit--the idea for the project was a spur of the moment idea by a student in Cohort 32 in late fall 2022. She sought permission to allow for a psychiatric based project from Dr. Bob Patterson, who said yes. From there the idea grew legs quite organically, as the student was doing carpool with a student, also in Cohort 32, who happened to be completing her clinical in the fall of 2022. The students chatted away about the idea of creating a therapeutic garden for holistic mental health and realized that the half
acre yard, currently overwhelmed by weeds and disuse, would be a potentially perfect place to create a thriving, colorful, therapeutic garden.

There are approximately 30 male residents on site at any given time and all have been personally and legally impacted by their substance use and addiction behaviors. Their length of stay is variable but nearly all participants follow the program for 30 days and then have the option to continue for another 60 days in the program. Participation in the program can be self-selecting or a resident can be offered placement there by a judge. Regardless of how they get there, the treatment time is spent in various cognitive behavior related meetings, one on one therapy with a counselor and time working on chores, socializing and residing in the dorms together for the duration of their stay.

The project itself gained traction in a completely organic and unusual way and that has been the foundational experience of all that we have done thus far (Appendix B). With the site having been secured in late fall 2022, and the Clinical Instructor in place, it was time for each of us who might be interested in working on this as our project to write a short essay stating why we would like to work to create a therapeutic garden with a holistic approach to mental health.

The essays were turned in and the assignments made to create the group that we have now and by sheer luck of the draw, there are students who are amazing photographers to capture the weekly work of the residents who are working side by side the students to create the garden, there is someone knowledgeable in creating a go fund me platform in order to raise the funds to purchase the materials needed to put the physical aspects of the garden together. Add on two students who are amazing at support work and writing and two more who have extensive experience planning and building small construction projects and have tools in hand to loan to the execution of the garden build out and implementation.
One of our first steps was to visit the site itself and begin planning for size and specific location of the garden within the half acre site of weeds. It was determined that we needed at least an 8 foot perimeter fence in order to keep out the large flock of local turkeys who had recently and quickly destroyed the ad hoc garden of corn that residents had put into the yard. In order to achieve longevity for the garden itself, we needed 4 x 4 x 8 foot posts and concrete to set them into, we needed a small greenhouse to protect the tiny seedlings from the elements and we needed a gate into each; the garden and the greenhouse. In addition, we needed raised beds to plant the herbs, vegetables and flowers in.

An initial list of materials was made (Appendix J) and we began fundraising. This was another unusual element to this project, for the fact that it was new and had never been done before required that we raise the funds to purchase the materials needed to build and implement the garden. Time was spent out in the yard, conceptualizing, measuring and plotting where and how to begin. This being spring 2023 and our time outside was severely impacted by 12 atmospheric rivers arriving nearly weekly throughout the fall, winter and spring of 2023. Travel to and from the garden site was precarious at times due to tree fall across roads and highways and yet fortuitously, these trees will become the wood chips that we so desperately need for our garden in a few months time. There were several weeks in which we were unable to access the site due to heavy rains and several more weeks which did not allow us to work due to the depth of mud covering the garden plot.

Once we had our initial design on paper and our gofundme gaining traction and funds for the materials, we met with residents to explain the project and requested their participation and support. Many of them were excited for the chance to be outside and yet an equal number were dubious and did not feel the project would benefit them or their time in residential treatment any
way. Onward we ventured. Each week we met the residents for morning group and spoke candidly about how we were feeling that day and why and then they joined us for time in the garden, weather permitting. We would lead them in a morning stretch, sharing the benefits of moving one’s body and stretching and breathing for better health overall and a quick and easy way to calm the nervous system. From there, we outlined the need to uproot and remove the weeds from the measured garden plot. This work took many, many hands and was done over the course of several visits by our student group. We worked tirelessly alongside them with the tools we had been donated, as we were still in the fundraising stages of the project. The initial garden space was going to be 50’ by 30’ feet. Dozens of trips to the newly created compost pile were made and we found earthworms, mud and lots of rocks in our work to create a weed free space.

An initial trip to the hardware store was made after we reached our fundraising goal of $2000. It was quickly noted that we needed to scale back the size of the garden due to cost restrictions. The materials list for a garden 50’ x 30’ was significantly over our budget. We regrouped and decided to create a fenced in area of 21’ x 24’ and the remaining area, now free of weeds, would be used to plant more hearty crops and herbs which could reasonably survive a turkey dinner. In addition, we would source lumber to build some benches and beautify the grounds outside the initial garden space.

In addition to the work being done on the garden itself, dozens of hours were spent researching locations for free pick up of wood chips, soil, rocks and materials. Scouring the local FB Marketplace for free materials, calling and texting anyone who might be able to donate a dump truck load of wood chips for the pathways and beds and procuring a source or two for soil for the beds was work done by each of the students in the group. Costs of these items would have been way out of reach for our budget due to the quantity we would need and the additional
Therapeutic Gardening for Mental Health in Substance Use Recovery

delivery fees attached. We also needed the delivery timed to when it was suitable for the project. We couldn’t have soil delivered too early or it would become a small hill of mud in the parking lot and the quantity of wood chips needed required a delivery timed very closely with when we would be onsite to move them into the garden pathways and beds before they became water logged and difficult to shovel and move.

With the initial size of the garden being too costly in terms of materials, we scaled down and then made a financially feasible list of items to purchase from a nearby Lowe’s to have delivered on a specific date. It was noted at the very last minute that the delivery time we had to adhere to would not be fulfilled by Lowe’s and so the entire order needed to be replicated at a nearby Home Depot which would deliver on the day we had the contractor scheduled to come and help with building the raised bed frames (Appendix K).

Next steps included research into creating materials to share with residents about how to care for the garden, and the links this project would have to their long term self-care. Horticultural therapy is a non-pharmacological intervention strategy for promoting mental health and reducing depression widely used in rehabilitative, vocational and community settings and is the platform on which our garden project and its long term impacts on the residents, was founded (Tu, 2022, p. 604). Spring rains being abundant gave us the chance to implement garden care lessons on watering times and frequency, weeding and composting as well as thinning seedlings as they grow and have enough air circulation and light.

We discussed the different ways to implement a garden wherever you may be. Apartment gardening can begin with planting some carrot or squash seeds into yogurt containers and watching them grow. Eventually these plants would be big enough to move into a to go food container or a large bucket and can keep growing outside on the front porch until harvest time.
Fennel, celery, sweet potatoes, celery and so many more plants can be placed into a jar of water and sprouted from the stem, growing an entirely new set of leaves for harvest into a future salad. Herbs such as mint, basil, rosemary and cilantro are all abundant growers once established in a patch of dirt outside and will provide continuous harvest for years.

Residents were actively involved in creating a list of cultivars they would like to plant in the garden; peppers, tomatillos, tomatoes, squash, corn, cilantro, and were quick to connect their future success to the many uses their produce could contribute to the meals prepared in the kitchen (Appendix E). They became engaged in the idea of eating their hard work and motivated by the work taken to get there. It was exciting for us all to support them in sharing their experiences in gardens as children, parents and uncles and refresh their interest in bringing these ideas to their families again.

Prior to working in the garden we would do a check in with the residents, giving them a quick orientation to what is going on, ask for help with certain aspects of the project and do a warm up. Approximately 15% of the men will graduate during our project timeline and that many more men will begin residency before the end of our project. It was important to keep the new residents up to date on what the garden project was and their involvement in it and at it provided a time for current residents to express their feelings and potential support of the work they had been doing in the garden so far. We did a quick review of names as well to help build community and rapport for the next 3 hours we would be working side by side outdoors, all of us needing the support of one another. For specific work being done that day; build a gate, staple up chicken wire, dig post holes, we would ask for any residents who have construction or garden experience and would like to take the lead in helping with these projects. This allowed them a time to shine and share their skills with each other and develop connections in new ways not
based upon their substance use or addiction.

We ended our introduction time outside with a quick reminder of keeping themselves safe and assisting their bodies in doing the work of the day. A few warm up exercises, all done together in a circle always broke the ice and provided for some laughs. It was engaging and delightful to see this very varied group of men bond in ways they had likely never dreamed possible. Imagine 30 men in a circle, windmilling their arms, twirling their hips and touching (or trying!) their toes on a cold and windy morning on the top of a remote hill in south San Jose. These were the delights and measures we were able to use to assess our success in the work on a weekly basis.

Other challenges of this project include limitations on what hours we can work on the project. As mentioned, we had several weeks of torrential rains which disabled any work on the garden, as we didn’t want to get the clients or ourselves sick with a cold due to working outside in wet winter weather. Additionally, the program director scheduled participation by the clients in the garden to time when our nursing student group was in attendance on site. There were many clients who wanted to work additional days in the garden when we were not there. This created an opportunity for engagement with the clients, educating them on watering times and frequency and amounts. In addition, they were able to assess the garden and find chores that needed to be done and wait until we were all working together to get them done. The time to work together was so beneficial, as we were not only able to learn from each other, but also have that time to connect and engage with them on a different and more personal level. We all not only put our hard work into the creation but also found our stories there too. Working in the garden became a weekly opportunity for us all to share our stories, ask questions and get feedback, not only on work related to the garden but life experiences as well.
Time in the garden also provided the problem of accessibility we had not realized before beginning our work. The men who are residents come from all walks of life, are all ages and as such have vastly different experiences and abilities. The amount of physical labor that needed to be done was phenomenal, but we had not considered what to share with the men who were unable to participate in this level of physical work. This afforded us the chance to ask meaningful questions and let them tell us what they were comfortable doing and together we realized many variations of participation. Many of the men have an artistic background and wanted to express that in the garden in some way. Providing large flat rocks and paint allowed them to paint the names of certain plants and herbs to use as markers in the garden beds (Appendix G). There were other clients who were able to scour the original raised bed for all the weeds and get them to the compost and others who found work raking leaves, weeding the larger garden and watering, proving that there was enough work to go around (Appendix C)!

**Nursing Relevance**

The role of the CNL at the point of care has many avenues by which to implement collaboration with healthcare leaders in order to address the critical need to improve the quality of patient care outcomes (AACN 2013). In this project, my role as a CNL was focused on being an educator, a client advocate, an outcome manager and a systems analyst and risk anticipator.

In my role as an Educator, I incorporated curriculum rooted in evidence-based practice, on topics such as how and where to establish a garden and why, seed selection and sourcing, planting timelines and seasonal schedules for planting the proper plants at the right time of year. There were also lessons on how to take care of the physical body in relation to the foods we eat and the importance of stretching before doing the deep digging and lifting that the initial build out of the garden required. Included in the sustainability plan for the future of the garden are
lessons in garden upkeep and maintenance as well as a myriad number of ideas on future education projects with the garden as the foundational inspiration (Appendix D). These lessons helped establish the idea of a tool kit for the residents, allowing for future lessons on healthy coping strategies to replace negative behaviors associated with substance abuse, reduce stress and anxiety and improve physical health.

In my role as Client Advocate, my focus was on each client as an individual and how I could support them as they made their way through the iterations of the garden project. Asking open ended questions and listening to their answers about the garden, about life, about anything they wanted to discuss was a pivotal part of the work we did. The outdoor space quickly became a safe space for clients to address issues they were having or just freely express themselves in a manner they had possibly not enjoyed before. The abundant space with views across the valley and the sky above offered the idea not only of limitless possibilities but also freedom. Responsibilities for others’ expectations of them fell away and they were able to capture new ways of feeling and responding to the world around them while working and playing outside. The build out of the garden had many different aspects to it; digging holes, pulling weeds, leveling soil, hauling wood chips, setting posts, cutting wood, securing chicken wire and so much more. As a client advocate, this created a dynamic way to share the project with different clients and their comfort level of getting involved or their need to relax in the shade and just think about anything and nothing out in the sun (Appendix H).

The Outcome Manager portion of the project involved synthesizing evidence based practices and data related to the topic of gardening and sobriety by incorporating weekly interventions through positive patient interactions with clients in order to aid in their recovery. In synthesizing the information about the clients in general, I was able to pursue individual and
group outcome goals. Examples of these goals included teaching clients and sharing knowledge about the overall process of creating a garden, establishing my role as a nursing student and with that the ability to facilitate the process of garden creation with tools to support their mental health and wellness, and fostering a sense of security and safety in the physical environment of the garden and the outdoors as well as with each of the other clients inasmuch as they were living and working together at the facility yet have very different histories and backgrounds and paths to their substance use recovery.

The Systems Analyst and Risk Anticipator role required that I review recent curricula to find garden related activities which could take place outside a classroom. These ultimately included lessons on weeding, proper digging techniques and stretching to prior to garden work in order to prevent muscle fatigue and soreness following a garden work day. Additionally, a focus on risk prevention lessons to aid clients in overall safety in a work environment. Clear communication about proper tool use and maintenance, the importance of sunscreen for skin cancer prevention, guidelines for use of eye protection during power tool use and the imperative to put away all tools once finished so that they do not become accidental weapons when left on the ground for someone to trip on. Each of these lessons may seem of minor importance and yet when the clients were all out working together in the garden, the amount of movement and activity and the myriad number of directions that any one person was moving in or the project that three specific people might be engaged in required a very subtle hand and gentle reminders to follow each of the expected rules consistently in order to allow for the safety of each individual thus promoting the continuation of the project overall.
Expected Results

This project was an original work, created literally from the ground up by myself and my classmates in the CNL program at the University of San Francisco. We had an idea and then jumped in, wholeheartedly and without a very specific and reliable plan of what our results would or could be. We knew at the outset that we wanted to build a physical garden space for residents of a substance use recovery facility to enjoy for years or even decades, to come. We wanted to share with them some tools for gaining improvement in their own mental health that they could use and share for years or even decades to come. With the responses to our five surveys given across the length of the project, we believe we have succeeded (Appendix I). Over half of the residents consistently reported that they enjoyed the time outside and the time with each other. They gained knowledge about themselves and discovered new ways of dealing with loads of extra time and how to navigate their thoughts about using away from thoughts of using. In the end, we built a garden and created a foundation for each of them, each of us, and many future residents to be outside and recognize freedom from substance use and strength in themselves by just living each moment as it comes to them. I know for myself, I expected and hoped for nothing less than this and our outcomes of this project are beyond my wildest dreams.

Summary Report

In my final CNL project, I sought to aid individuals in their recovery process by creating a garden at a substance use recovery site and provide them with the tools to improve their mental and physical health while working with others to implement a lively outdoor space to be used by future residents. A longitudinal study will need to be developed to measure the long term impacts that the project will have on the sobriety of the clients. At this stage of the project, the team has created sustainability plans and supporting documents (Appendix D), in order to give
current residents information about how to care for the garden and what types of maintenance will be required (Appendix F) as well as giving future groups a plan for possible next steps (Appendix L). This project and its long term goal of aiding individuals in their recovery process also provides USF students with a unique opportunity to contribute to the research pool which will support the future adoption of therapeutic gardening in similar environments.

The most obvious impact is the transformation of the physical space in which clientele can go outside and tend to the garden while cultivating relationships with themselves and others, whereas before there was a meadow of grass, three scraggly trees and a neglected horseshoe pit.
Appendix A

5 Quick Questions

1. Has your mood changed/improved after gardening?

   1  2  3  4  5
   Totally Disagree Partially Agree Totally Agree

2. On a scale of 1 to 5, how much do you agree with this phrase: "I feel inspired to get outside in the garden."

   1  2  3  4  5
   Totally Disagree Partially Agree Totally Agree

3. Can you see yourself using gardening as a tool to aid in your recovery process?

   1  2  3  4  5
   Totally Disagree Partially Agree Totally Agree

4. On a scale of 1 to 5, how much do you agree with this phrase: “Being outside in the garden makes it easier to cope with my cravings.”

   1  2  3  4  5
   Totally Disagree Partially Agree Totally Agree

5. On a scale of 1 to 5, how much do you agree with the following statement: "I learned something new today."

   1  2  3  4  5
   Totally Disagree Partially Agree Totally Agree
Muriel Wright Survey for Staff

1. On a scale of 1 to 5, how much do you agree with the following statement: I have noticed clients spending more time outdoors/in the garden compared to before the project began?

   1  2  3  4  5
   Totally Disagree  Agree  Totally Agree

2. On a scale of 1 to 5, how much do you agree with the following statement: I have heard clients talking about the garden throughout the week?

   1  2  3  4  5
   Totally Disagree  Agree  Totally Agree

3. On a scale of 1 to 5, how much do you agree with the following statement: I have noticed a change in the mood of the clientele after periods of gardening?

   1  2  3  4  5
   Totally Disagree  Agree  Totally Agree
## Appendix B

### GANTT Chart

<table>
<thead>
<tr>
<th>Tasks</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wk 4</td>
<td>Wk 1</td>
<td>Wk 2</td>
<td>Wk 3</td>
<td>Wk 4</td>
</tr>
<tr>
<td>Conceptualizing project</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participation in morning Group</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planning of garden specifics</td>
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<td></td>
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</tr>
<tr>
<td>therapy</td>
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</tr>
<tr>
<td>Fundraising via GoFundMe</td>
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<td></td>
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<td>therapeutic gardening</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchase construction materials</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dedication Ceremony</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Garden Construction Progress         |         |          |       |       |      |      |      |      |      |      |      |
|                                      | Wk 4    | Wk 1     | Wk 2  | Wk 3  | Wk 4 | Wk 1 | Wk 2 | Wk 3 | Wk 4 | Wk 1 | Wk 2 |
| Turn soil                            |         |          |       |       |      |      |      |      |      |      |      |
| Map out enclosure space              |         |          |       |       |      |      |      |      |      |      |      |
| Dig post holes                       |         |          |       |       |      |      |      |      |      |      |      |
| Construct planter beds              |         |          |       |       |      |      |      |      |      |      |      |
| Erect & cement posts                 |         |          |       |       |      |      |      |      |      |      |      |
| Hang Chicken Wire                    |         |          |       |       |      |      |      |      |      |      |      |
| Construct greenhouse section         |         |          |       |       |      |      |      |      |      |      |      |
| Make doors                           |         |          |       |       |      |      |      |      |      |      |      |
| Fill raised beds                     |         |          |       |       |      |      |      |      |      |      |      |
| Spread wood chips                    |         |          |       |       |      |      |      |      |      |      |      |
| Plant seedlings                      |         |          |       |       |      |      |      |      |      |      |      |
Appendix C

SWOT

STRENGTHS
- Gardening experience among clients and students
- Support from program directors
- Low maintenance costs
- Friendly staff and clients
- Minimal barriers on design of project

WEAKNESSES
- High start up costs
- Lack of budget
- Tight schedule
- Lack of cohesive attendance among clients
- No prior upkeep on planned garden space
- Unwieldy process for procuring critical and costly elements of garden: wood chips, soil, and rocks

OPPORTUNITIES
- Large yard space with fertile environment
- Previous interest in gardening among clients
- Client eagerness to participate
- Education
- Increased patient centered care
- Increased patient and staff satisfaction
- Bringing awareness to benefits of therapeutic gardening process

THREATS
- Noncompliance
- Wildlife
- Lack of engagement/sustainability plan to ensure project continues
- High turnover of client population
- Reduced patient and staff satisfaction
- Reduced quality of patient care
- Materials prices limiting size and scope of project
Appendix D

USF & Garden Project Sustainability Plan:

Step 1: Define your vision, mission and values for the project
Step 2: Create a sustainability plan that will keep the garden alive (literally)
Step 3: Benchmark and assess ongoing performance
Step 4: Engage employees

This work we have done so far in the garden: planning, fundraising, building were really about physically “planting seeds” and “setting down roots”.

The next phase is to continue “watering”, “pruning”, “feeding” via integration into the official program curriculum, increasing buy-in from staff so that they can help facilitate/engage with the garden by encouraging participation. By allowing future USF CNL cohorts to have a similar opportunity as this one, the gardening intervention may create a growing impact on the program.

How does this fit into the treatment center Mission Statement and Values?

Mission Statement:
- “Telecare's mission is to deliver excellent and effective behavioral health services that engage individuals with complex needs in recovering their health, hopes, and dreams.”

Telecare Values:

Security: Having to take care of living things, such as plants, helps to teach accountability. Additionally, ensuring that new crops are planted and the garden is maintained by the clients encourages continuity of the project for future generations of clients to enjoy and benefit from.

Growth: The garden provides another tool for clients to utilize in their recovery. It creates opportunities for staff to learn about a different type of therapy (aka Horticulture therapy*).

Partnership: The garden provides an environment where people can come together to relax, learn, and work together on a project. It also opens up the possibility to partner with outside organizations and groups, broadening the support network of the facility and the clients.
Service: Further investment in and dedication to sustaining a therapeutic garden can act as a stepping stone that begins with nurturing a plant, and may result in a renewed appreciation to helping oneself and others.

Respect: Finding peace and nourishment in mother nature opens the path to respect for mother nature, turkeys and in turn, ourselves and others. We learn respect for the beauty and bounty that surrounds us and can begin to shape an ideal based on simplicity and taking care of ourselves and then others and the land.

Excellence: Encouraging clients and staff to utilize the garden, even just for sitting in the sun and relaxing, may provide an additional safe environment to aid in recovery. ‘Green Care’ is also an evidence-based practice that has great potential in a setting as unique as what we were able to work in, where the outdoors are prominent. [https://www.ahta.org/about-horticultural-therapy](https://www.ahta.org/about-horticultural-therapy)

Implementation of the garden into the current culture:

Immediate Considerations:

- Garden maintenance and general care:
  - How can we implement maintenance and general care into the daily chore list?
    - Watering, weeding, pruning, harvesting, and planting new seeds
    - **Deliverable:** Daily chore list flyer is provided
    - We need staff input and effort to ensure that there is follow through. This may be in the form of adding it to the daily chore list.
  - Quarterly assessments for physical damage to the garden structure
    - perimeter fencing, greenhouse including roof, gates, benches
  - Establishing routine maintenance for surrounding area
    - Can we contact the county to have them come quarterly?
    - mowing grass, trimming trees
  - Tool Storage
    - Where is the best place to store tools to prevent elemental damage?
      - Under the eves for now? Inside the enclosure?
      - Is there any potential for a future project to build/buy a shed for storage?
  - Are staff committed to this gardening project?
    - Who will encourage involvement in the garden in the immediate future?
      - Even if it is just ensuring garden chores get done
  - Exit Survey: What do the residents want from the garden— and expand the idea of the space beyond the garden to include possibilities of the following: Food? Time in the shade outside? More furniture? Horseshoe pits? Smoking corner under a shade tree? Tables for playing cards?
○ **Deliverable:** Once we review the results of the exit survey, we will package them nicely and email the results to you for further consideration. These results will also be shared with the incoming group of USF students for them to consider as well.

**Future Tasks:**
- Increase kitchen involvement: planning for meetings with kitchen staff to explore desires, collaboration and expectations.
### Appendix E

**List of Plants Chosen for Garden**

<table>
<thead>
<tr>
<th>Plant</th>
<th>Features</th>
<th>Care Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marigold</td>
<td>Marigolds attract pollinators, assist with pest control, and the blooms can be used for holidays and special events.</td>
<td>Marigolds thrive in bright full sunshine. Once the marigolds are established, pinch off the tops of the plants to encourage growth. Water at the base of the plant instead of from above.</td>
</tr>
<tr>
<td>Nasturtium</td>
<td>Nasturtiums are a peppery edible flower that attract pollinators, and deter pests.</td>
<td>Nasturtiums prefer full sun and moist soil. Cutting the dead flowers can promote growth. If the plant is heat-stressed it may stop blooming (water regularly to prevent this).</td>
</tr>
<tr>
<td>Pumpkin</td>
<td>A classic symbol of fall, pumpkins are a nutrient-rich food that provides ample vitamin A, vitamin C, and fiber.</td>
<td>Pumpkins require a lot of water, it is best to avoid wetting the leaves. Pumpkins grow aggressively, make sure the plants are spaced apart to give them ample room to grow.</td>
</tr>
<tr>
<td>Onion</td>
<td>Onions are an excellent crop for any type of cooking and they also act as a pest repellant due to their strong odor.</td>
<td>Do not cover emerging onions, if you want sweeter onions water more (onions do not like to be over-watered). When the onion is mature the top will become yellow and start to fall over.</td>
</tr>
<tr>
<td>Spinach/Kale</td>
<td>Spinach is a low-maintenance, high-yield crop.</td>
<td>Spinach needs 6 weeks of cold weather from seeding to harvest. Sow every couple of weeks. Keep the soil consistently moist. Thin the plant to keep them around 3-4 inches apart (what you pull is edible still).</td>
</tr>
<tr>
<td>Vegetable</td>
<td>Description</td>
<td>Care</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Carrot</td>
<td>Great source of vitamin A and can be eaten raw or cooked.</td>
<td>Harvest the carrots in stages so you can harvest for many weeks. When the carrot is ready to harvest, the top will likely be ( \frac{3}{4} )-1 inch in diameter and pop out of the soil (not always). They are normally ready after 60-80 days.</td>
</tr>
<tr>
<td>Cilantro</td>
<td>Cilantro is a fast-growing delicious herb.</td>
<td>Thin seedlings to 6 inches apart. Once established, the plants do not need excessive watering. When cilantro grows its stalk, cut the plant after the seeds drop to allow it to self-seed.</td>
</tr>
<tr>
<td>Peas</td>
<td>Peas are easy to grow and delicious, they also produce wonderful flowers.</td>
<td>Water peas sparsely (no more than 1 inch per week) unless the plant is wilting. Most are ready to harvest 60-70 days after planting. Harvest the peas regularly to encourage additional pods to develop.</td>
</tr>
<tr>
<td>Beans</td>
<td>Beans are great to grow with limited space and are highly productive.</td>
<td>Water regularly (otherwise they will stop flowering). Harvest beans in the morning (they will be the sweetest then). Harvest every day if possible to encourage additional growth.</td>
</tr>
<tr>
<td>Tomato/Tomatillos</td>
<td>Tomatoes/tomatillos are delicious sun-loving crops.</td>
<td>Avoid overhead watering (water at base). Watering the foliage encourages disease. During drought periods, place flat rocks next to the plant to decrease water evaporation. Water during the morning so the plants have enough moisture to get through the day. Harvest when the plants are firm and vibrant in color</td>
</tr>
</tbody>
</table>
Peppers | Peppers are a nutrient-rich warm flavorful crop that are luckily resistant to most pests and diseases. | Peppers love to be in full sun. Peppers enjoy slow, deep watering to establish health roots. Inconsistent watering can lead to blossom-rot. As soon as the peppers reach their full size and color, pick them to encourage more consistent growth.  
---|---|---
Strawberries | Strawberries are fast-growing and low maintenance. | Regular weeding and watering is critical. Harvest only fully-red berries every couple days.  
---|---|---

Appendix F

Daily Garden Checklist
Daily Garden Checklist

Watering

- Water as close to the plant base as possible - avoid getting water on the leaves/flowers - it can damage them.
- Water until you can feel moisture in the soil to a depth of one inch.
- GREENHOUSE plantings:
  - water when dry, avoid too much water/pooling
- OUTSIDE plantings:
  - Spring/Summer: water in evening to prevent sun evaporation during the day; water every other day. Water every day if temperatures are above 90 degrees.
  - Fall/Winter: water early morning before full sunrise so water evaporates throughout the day and reduces rot risk; water every 2-3 days.
  - If it is raining over an inch per day, no watering needed.

Weeding

- Check garden every day for weeds
- Remove weeds you see with garden gloves to avoid injuries
- Make sure to remove the entire weed by starting at base to remove roots

Pruning

- Check garden every day for dead/dying branches, flowers, & leaves. Remove carefully and add to compost pile
- Remove any small branches or leaves using the hand shears
- Removal of large parts of plants should be held off until winter if possible
- Harvest fruits/vegetables frequently, this gives the plant an incentive to produce more

Feeding

- Your garden needs to be fed, just like you!
- The compost pile is located in the backyard on the left corner; please only add uneaten food and organic matter - no plastic or metals or bones please!
- Spread compost around the garden plants in the fall/winter time so that it feeds the garden during spring and summer, when most of the plants will bloom & produce food

Most importantly, have fun!
This garden was created for you in hopes that it helps you build your confidence and reminds you that we are always growing and changing - it can be an uncomfortable but beautiful process. We have good days and we have bad days, what matters is that we make the effort to take care of and feed our own personal "gardens".
Appendix G

Lesson Plan: May 5

We can start with an ice breaker exercise where each client answers this question to the group: “If there is one thing that could be added to the garden to make it the place you want to be, AKA my dream garden, what would be added?” (I will take notes of what folks say so we have some data to pass on to future cohorts about what the clients want to see more of in the garden)

Examples: My dream garden would have:
  ● More shade
  ● More lounge furniture,
  ● The planting of ________ which was my favorite fruit/vegetable growing up,
  ● A waterproof speaker
  ● A horseshoe pit
  ● A beautiful mural
  ● A meditation corner

After the whole group has shared one thing that would make their dream garden the best it could be, we can play Jeopardy!

https://jeopardylabs.com/play/240253726c

Here is the link, password is Garden. So far I have 2 columns, will add 2 more. Any thoughts on other topics? Jeopardy seems like a great way to educate the clients about garden care, etc.
Appendix H
Survey Results Overall

<table>
<thead>
<tr>
<th>Question 1. Has your mood changed/improved after gardening?</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
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<tr>
<td>1 0 2 1 6 5 7 2 0 2 0</td>
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<table>
<thead>
<tr>
<th>Question 2. On a scale of 1-5, how much do you agree with this phrase: &quot;I feel inspired to get outside in the garden.&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Totally Disagree 2. 3. Agree 4. 5. Totally Agree</td>
</tr>
<tr>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>1 0 3 1 5 6 3</td>
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<table>
<thead>
<tr>
<th>Question 3. Can you see yourself using gardening as a tool to aid in your recovery process?</th>
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</thead>
<tbody>
<tr>
<td>1. Totally Disagree 2. 3. Agree 4. 5. Totally Agree</td>
</tr>
<tr>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>3 4 1 5 6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 4. On a scale of 1-5, how much do you agree with this phrase: &quot;Being outside in the garden makes it easier to cope with my cravings.&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Totally Disagree 2. 3. Agree 4. 5. Totally Agree</td>
</tr>
<tr>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>2 2 5 4 7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 5. On the scale of 1-5, how much do you agree with the following statement: &quot;I learned something new today.&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Totally Disagree 2. 3. Agree 4. 5. Totally Agree</td>
</tr>
<tr>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>1 0 1 1 4</td>
</tr>
</tbody>
</table>

Q1: Has your mood improved after gardening?

![Bar chart showing the distribution of responses to Q1 across different dates]
Q2: On a scale of 1-5, how much do you agree with this phrase: "I feel inspired to get outside in the garden."

- Totally Disagree
- Disagree
- Partially Agree
- Agree
- Totally Agree

<table>
<thead>
<tr>
<th>Date of Survey</th>
<th>Number of Clients</th>
</tr>
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<tbody>
<tr>
<td>3/24/2023</td>
<td></td>
</tr>
<tr>
<td>4/7/2023</td>
<td></td>
</tr>
<tr>
<td>4/24/2023</td>
<td></td>
</tr>
</tbody>
</table>
Q3: Can you see yourself using gardening as a tool to aid in your recovery process?

- Totally Disagree
- Disagree
- Partially Agree
- Agree
- Totally Agree

Number of Clients

Date of Survey

3/24/2023
4/7/2023
4/24/2023

Q4: On a scale of 1-5, how much do you agree with this phrase: "Being outside in the garden makes it easier to cope with my cravings."

- Totally Disagree
- Disagree
- Partially Agree
- Agree
- Totally Agree

Number of Clients

Date of Survey

3/24/2023
4/7/2023
4/24/2023
Q5: On the scale of 1-5, how much do you agree with the following statement: "I learned something new today."

- Totally Disagree
- Disagree
- Partially Agree
- Agree
- Totally Agree

Number of Clients

Date of Survey

3/24/2023
4/7/2023
4/24/2023
## Appendix J

### Garden Budget

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Estimated Cost (per unit)</th>
<th>Total Cost (B x C)</th>
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<tbody>
<tr>
<td><strong>Boxes (4x8ft) 3 of them</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2&quot;x12&quot;x12 boards</td>
<td>10</td>
<td>$23.75</td>
<td>$237.50</td>
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<tr>
<td><strong>Enclosure (20'x24'x8')</strong></td>
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<tr>
<td>4&quot;x4&quot;x10'</td>
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<td>$14.97</td>
<td>$269.46</td>
</tr>
<tr>
<td>2&quot;x4&quot;x10'</td>
<td>4</td>
<td>$4.22</td>
<td>$16.88</td>
</tr>
<tr>
<td>2&quot;x4&quot;x8'</td>
<td>6</td>
<td>$2.98</td>
<td>$17.88</td>
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<tr>
<td>Furring Strips</td>
<td>24</td>
<td>$2.39</td>
<td>$57.36</td>
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<tr>
<td>Cement</td>
<td>16</td>
<td>$4.23</td>
<td>$67.68</td>
</tr>
<tr>
<td>Hinges</td>
<td>4</td>
<td>$4.84</td>
<td>$19.36</td>
</tr>
<tr>
<td>Door handle</td>
<td>2</td>
<td>$14.73</td>
<td>$29.46</td>
</tr>
<tr>
<td>Latch</td>
<td>2</td>
<td>$3.98</td>
<td>$3.98</td>
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<tr>
<td>Brackets</td>
<td>28</td>
<td>$1.18</td>
<td>$33.04</td>
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<tr>
<td>weed barrier</td>
<td>2</td>
<td>$36.98</td>
<td>$73.96</td>
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<tr>
<td>screws</td>
<td>1</td>
<td>$35.99</td>
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<td>Polycarbonate panels for Greenhouse</td>
<td>16</td>
<td>$18.98</td>
<td>$303.68</td>
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<td>Chicken Wire (4'x100')</td>
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<tr>
<td>Bird Netting</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>$1,351.21</td>
</tr>
<tr>
<td><strong>with tax (conservative 10%)</strong></td>
<td></td>
<td></td>
<td>$1,488.33</td>
</tr>
<tr>
<td>Where/Items</td>
<td>Cost</td>
<td>Total Remaining</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>--------</td>
<td>----------------</td>
<td></td>
</tr>
<tr>
<td>Total Available</td>
<td></td>
<td>2,051</td>
<td></td>
</tr>
<tr>
<td>Gloves</td>
<td>$15.19</td>
<td>2,036</td>
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<tr>
<td>Lowe's (Lumber)</td>
<td>310.73</td>
<td>$1,725.58</td>
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<tr>
<td>Home Depot (Lumber + Polycarbonate)</td>
<td>852.62</td>
<td>$872.96</td>
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<tr>
<td>Fairfax Lumber</td>
<td>$172.62</td>
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<tr>
<td>Lowe's (wire, door mats, brackets)</td>
<td>$231.16</td>
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<tr>
<td>Lowes</td>
<td>$96.04</td>
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<td>Home Depot</td>
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<td>Plants from HD</td>
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<td>Amazon (Bird Netting)</td>
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<td>Gas Reimbursement for Pickup Truck</td>
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<td>Screws for polycarbonate</td>
<td>$14.22</td>
<td>$0.84</td>
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</tr>
</tbody>
</table>
Appendix K

Garden Layout

Scale: 1 square = 1 square foot
Appendix L

Further Sustainability Notes

Meeting Notes: May 5 2023: Program Director & Program Administrator & Anie Schafer

Tools to be stored in locked tool shed for safety and keeping tools free from rust and damage: consider posting a check out chart allowing clients to use tools as needed for maintenance

Each time meeting with clients, procure a list of names of residents in residence that day and assign them a specific chore to do *with a USF student* during their garden time

Be VERY specific about expectations of chores. For example:
Watering: water each planting area (and make a list for them to check off) for 5 minutes each
Check with index finger inserted into soil for dampness
Each box should be wet to an inch of depth throughout

Additional specifications for ALL current and any future chores: pruning, weeding, composting, etc

Find or create youtube videos to show exactly the type of watering you want done. Add videos to a library and share the link with residents to watch at their convenience
https://www.youtube.com/watch?v=ueQCiSD5AdM

Plan the garden to include a seasonal rotation of food sources for the kitchen. A yearly calendar can be made to help with seeding, planting and harvesting. Share ideas with the kitchen staff and let them be a part of the planning process.

Post chore chart in: Dining area, greenhouse and next to chore chart in group meeting room.

Contact county or communicate with Program Administrator about when mowing will occur. Potentially bring county on board to see what we have created and create buy in from them with support in timely mowing of the grounds.

Meet onsite or over zoom with future student groups to share our original vision and thoughts about the garden. Get their buy in as well and tell them what we started with and how it grew. This will be important as the garden grows and gets bigger~or it will falter without loads of enthusiasm and support from members of the USF and Telecare MW community

Send photos to Program Administrator for current and future promotional materials and publication. Be sure to check with her about restrictions on client photo use and use of the name and location of the garden site.

Trash can be placed in the GIANT blue dumpster near the basketball courts at the front parking lot.
REFERENCES


