

**Narrative In a Garden:**

Integrating Horticultural and Narrative Therapy for Trauma Healing in Groups

by

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### **Abstract**

As a designation of its own, horticultural therapy (HT) has historically been an effective treatment for mental health. HT is not usually connected to the profession of clinical counselling and may be more widely accepted if combined with traditional talk therapy. Narrative therapy's techniques align with the reflective, growth-oriented nature of horticultural therapy. This capstone aims to understand the efficacy of an integrative horticultural narrative therapy model as a treatment for trauma and post-traumatic stress-disorder (PTSD). Group therapy is identified as a uniquely suited treatment for trauma and shapes the lens of this scope of research. Despite gaps in long-term studies on the impact of horticultural therapy for PTSD, the integration of these modalities presents a promising, group approach for trauma treatment. Future research will need to examine these approaches further, with particular focus on trauma-informed care. A narrative garden group therapy program is proposed as an opportunity to for later studies.

*Keywords:* horticulture, narrative therapy, trauma, group therapy, place attachment

### **Dedication**

I would like to dedicate this capstone to the incredibly supportive people in my life, who without them I would not have made it through writing this paper. To my supervisors, thank you for your editing input and support through the writing process. To my parents, thank you for your endless love and support throughout my education. To my closest friends, thank you for your encouragement and care. To my partner, thank you for your wonderful patience and motivation. And special thanks to Tyler the farmer, for taking a chance and teaching me to garden.

## Chapter One

### Purpose Statement

Trauma has profound and lasting impacts on the human psyche, often disrupting an individual's sense of safety and overall well-being. Intrusive memories, heightened physiological responses, and mental health challenges such as anxiety, depression, and hyperarousal are common symptoms of trauma and *post-traumatic stress disorder* (PTSD), the latter of which occurs when these symptoms persist for more than a month (Veteran Affairs, 2023). Effective trauma treatments vary widely, with many modern approaches emphasizing *somatic-based* practices, which focuses on reprocessing distressing memories through a sensory experience and without relying on verbal articulation (Courtois & Ford, 2013). This capstone explores horticultural therapy (HT) as a preferred somatic practice that integrates well with talk therapies, particularly narrative therapy, to offer trauma survivors a holistic path to recovery.

Horticultural therapy (HT), defined by the Canadian Horticultural Therapy Association as “a formal practice that uses plants, horticultural activities, and the garden landscape to promote well-being,” promotes experiential engagement and skill-building (Canadian Horticultural Therapy Association, 2024). In recent years, nature-based therapies have been gaining in popularity (Dobud & Cavanaugh, 2021). While horticultural therapy has gained traction in some clinical settings, its integration with traditional counselling methods remains underexplored (Koay & Dillon, 2020). A goal of this research is to help build a framework for the ethical integration of horticultural therapy that can be recognized by clinical counselling organizations like the BC Association of Clinical Counsellors (BCACC).

Narrative therapy, developed by Michael White and David Epston (1990), provides a flexible framework that supports client agency by separating individuals from their problems and

allowing them to reframe their stories. While narrative therapy on its own is not widely recognized as an evidence-based practice, its integration with other therapeutic modalities has demonstrated effectiveness, particularly in addressing complex PTSD (cPTSD) and trauma (Cloitre et al., 2006; Heywood et al., 2022; Schauer et al., 2005). The combination of these approaches creates a more robust and evidence-supported framework for treating trauma. These techniques, when paired with the metaphors and experiential opportunities provided by horticulture, create a rich and actionable therapeutic model (Dobud & Cavanaugh, 2021). This capstone research highlights the potential of integrating narrative techniques with the sensory practice of horticulture to address the multifaceted nature of trauma while offering participants meaningful skill development and emotional growth.

A key focus of this capstone is the application of this integrative model in a group setting. Group therapy is uniquely suited to trauma recovery due to its ability to foster a sense of community and shared understanding. Trauma survivors often experience isolation; group settings allow participants to witness and support each other's healing journeys, promoting validation and collective resilience (Mottershead & Ghisoni, 2021). By structuring this intervention within a group format, this capstone upholds the transformative potential of social connection as part of trauma recovery. This framework aims to provide clinical practitioners with research-backed, ethical approaches to expand their therapeutic practice. The literature review will be guided by curiosity of the efficacy of integrating horticultural and narrative practices in group therapy as an intervention for working with trauma and PTSD.

### **Theoretical Framework**

The theoretical framework for this research is grounded in *postmodernism*, which suggests that reality is subjective and shaped by unique meanings and interpretations (Shpancer,

2020). In this view, the therapeutic process becomes a collaborative exploration between therapist and client, emphasizing the co-construction of narratives that resonate with the individual's experiences, values, and goals. This theory has influenced the development of narrative and horticultural therapy, as they are both adaptable to align with the specific needs and aspirations of each client. Throughout this capstone, this postmodernist lens observes the research as subjective, understanding that societal norms, cultural biases, and clinical interpretations may be present in the results. With this consideration, research with unique and individualistic forms of data collection has been prioritized when possible.

Additionally, an environmental lens shapes this research, emphasizing ecological dignity and the importance of entering a conscious relationship with nature. From this perspective, the co-construction of narratives moves from the binary relationship to include a relationship with nature itself. Nature functions as a physical entity and co-therapist, providing forms of meaningful symbolism and guidance. When applicable, this research also seeks to incorporate non-Western perspectives, aiming to decenter and challenge colonial methods of presenting information. This allows for a deeper spiritual connection between nature and the self. For example, a worldview of the Anishinabek people regarding the natural world states there are “many ways of knowing, and certainty is not always necessary”, demonstrates an approach on subjective meaning and truth that may not be quantitatively measurable (Nelson et al., 2021). By balancing quantitative and qualitative research with narrative accounts, this paper honors the practice of witnessing and sharing in another's unique experience and interpretations. This approach not only enriches the research by including diverse viewpoints but also emphasizes the value of storytelling as a means of understanding and connection. Finally, this research is conducted through the idea that traditional talk therapy may not be effective for everyone. This

framework highlights the value of integrating a hands-on approach, such as gardening, for those who struggle with cognitive therapy alone, or who may require accessible therapeutic options.

### **Contribution to The Field**

There are several key reasons why this research is crucial. Nature-based therapy practices encompass a wide range of modalities, including horticultural therapy, making regulation difficult. Challenges related to safety, unpredictability, and a lack of comprehensive research can complicate efforts for practitioners to obtain insurance coverage. The research reviewed in this paper serves as a foundational support for practitioners, helping to address these concerns and alleviate some of the associated challenges. By identifying gaps in current practices and highlighting areas for future research, this literature review aims to contribute to the development and validation of horticultural therapy.

Currently, the British Columbia Association of Clinical Counsellors (BCACC) offers limited insurance for nature-based practitioners. Human Nature Counselling Society, an organization dedicated to ethical nature-based practice, has been instrumental in advocating for practitioners to gain access to insurance and has achieved significant progress in this area. As a strong advocate for this movement, I believe that with proper training and support, practitioners should be able to secure adequate insurance for their counselling needs. Human Nature Counselling Society, a leader in this field, continues to provide optimal training to support these efforts.

This exploration is taken a step further by approaching the nature-based practice of horticultural therapy (HT). From my understanding, HT is a designation that is insurable (Canadian Horticultural Therapy Association, 2022). However, horticultural therapists are not required to obtain the credentials of a clinical counsellor. This is where I find understanding the

intersection between horticulture, talk therapy, and nature-based practice quite gray. There are, of course, many benefits to gardening both therapeutically and as an independent activity.

Gardening can provide us with a sense of peace, creativity, and connection, while simultaneously developing personal autonomy and skill building capabilities. This research is not intended to disregard the HT training, but rather to extend horticultural practice into the world of clinical counselling by demonstrating practical application. By identifying the key components of horticulture, their benefits and therapeutic elements, I hope to discover this clinical application.

On the other side of the equation sits the therapeutic lens and modality. While HT training would allow someone to conduct themselves within nature ethically, the question remains regarding how clinical counsellors trained in talk therapy modalities could transition and combine their knowledge to inform a holistic practice. For this research, the modality focus will be narrative therapy. From my perspective, the two seamlessly fit; taking techniques such as externalization and meaning-making a step further by using action-based techniques, rooted in the deconstruction of powerful dominant discourses, including the discourse of talk therapy as an isolated source of healing. If the garden is used as a space to separate the person from the problem story, moments of intensely impactful meaning-making can be created through developing metaphors and encouraging client agency. For example, if a client witnesses an invasive species and its impact on surrounding the plants and garden, the connection through the natural world could be deepened through externalizing an internal problem that takes up a lot of space in their minds and impedes on their personal growth, as something that is not supposed to be there and as a space invader. For this work to be possible, it would be integral to develop and learn the tools to walk clients through this therapeutic process.

Therefore, the intended audience of this paper is counsellors and policy makers, insurance providers, and anyone interested in either adding horticultural therapy to their clinical practice or modifying their horticultural work with therapeutic techniques. In ethical practice, therapeutic modalities should only be conducted by a trained professional in the field and use appropriate titles (Canadian Horticultural Therapy Association, 2024). For counsellors, this research is intended to open new ways of providing care and healing, especially through group work. It would be incredible to see an amalgamation of registered clinical counsellors and horticultural therapists as a registered modality and practice. For anyone reading who is an avid gardener, I hope this research provides a chance to learn deeper connection to their space, to use the garden as a healing environment of both the body and mind, as a safe place to process trauma and as a place of connection and community.

### **Positionality Statement**

I am a white, cis gendered female and a second-generation immigrant to Canada. I live, work, and play on the traditional, unceded, and ancestral territories of the *sk̓wx̓wú7mesh* (Squamish), *xʷməθkʷəy̓əm* (Musqueam), and *səlil'ílw̓ ətaʔl* (Tsleil-Waututh) nations. I recognize that as a white settler, with the intention to grow and garden on these lands, I must be aware of the cross-cultural influences and where I obtain my knowledge and skill sharing. I will attempt to write, work, and research from a critical gaze regarding westernized ways of knowing, while still valuing the input of academic research. I encourage myself and other practitioners to confront their own privilege and ways of incorporating knowledge into their work. I will be making an active effort to give credit where it is due, and to not claim any traditional ways of knowing as my own.

I am aware of where my biases might emerge regarding this topic, particularly given my strong passion for gardening. In 2018, during my counselling diploma program, I spent a year and a half as an apprentice on an organic produce farm. I vividly recall a moment that clarified why I was so drawn to this work. I was hunched over a field, weeding through a sea of mixed greens, when I tuned in to the sound of a bird flapping its wings overhead. The spicy scent of arugula and mustard leaves filled the air, and I felt the grit of the earth beneath my fingernails. In that moment, I realized that this connection to the land was what I wanted to share with others, and it has since been a journey to understand why that moment left me feeling so complete.

During my time working on that farm, I discovered a deep sense of fulfillment from growing and sharing my own organic food. This experience revealed a spiritual connection to my food that I had not previously recognized. For many urban dwellers like myself, the routine is often to purchase produce from grocery stores, sourced from around the globe, or to subscribe to meal delivery services like HelloFresh (<https://www.hellofresh.ca/?locale=en-CA>). From a class and socio-economic perspective, this makes sense, and I acknowledge that many people face systemic and economic barriers to growing their own food or even having the time to garden. This is why it is crucial to advocate for community gardens with low-barrier access, rooftop garden developments, and food donation initiatives. Looking to the future, I hope to explore and contribute to the possibility of food production for donation. I envision designing workshops that provide space for skill development in mindful gardening, using gardening as a tool for narrative therapy, and offering sliding-scale access to these holistic practices. While I have a strong preference for narrative therapy, I recognize that it is not the only approach to integrating therapeutic practices with gardening. It is, however, the approach I am most drawn to use most often in clinical practice. I believe society plays a key role in forming personal labels and that

people can hang on a lot tighter to negative memories than to positive ones. I value individuality, uniqueness, empowerment, and I find externalization and meaning making to be powerful and functional tools of therapy. I believe narrative therapy works best as an integrative practice, used in combination with other modalities. I can use some of these techniques in my future practice and aid in further research development in this field.

As a learning therapist who incorporates gardening and nature-based techniques into my practice, I want to clarify my positionality. I am not currently designated as a Horticultural Therapist, nor am I associated with the Canadian Horticulture Therapeutic Association. In this research, I will refer to the scholarly articles as horticultural therapy. However, for my project design, I will use the term narrative garden therapy, which connects clinical counselling skills from a specific therapeutic lens with the creative practice of gardening. I describe it as creative because there are endless ways to find self-expression through gardening. It is not only a reflection of nature but also a reflection of the person's inner world as a gardener. It is an art form, a kind of magical collaboration between person and nature, filled with meaning, interpretation, and personal expression.

All that said, I recognize that the act of gardening may not always be the most applicable course of treatment. Entering a relationship with nature is a conscious decision and as nature-based practitioners, it must be understood that it is a bias to think this is helpful for everyone. However, gardening and working in natural spaces is not universally loved by everyone (Harper et al., 2019). Biophobia, or fear of the natural world, is a result of the ever-growing reliance on urban environments and spending increasing time indoors (Delaney, 2021). Acknowledging that the wildness of nature is very real and can be fear producing. It is always important to first assess a client's comfort level with nature before committing to treatment outdoors, and to build a

familiarity with a particular place over time. Gardening may act as a form of exposure therapy to nature, and developing resilience to this fear may be possible through small and intentional interactions.

**Key Terms*****Biophobia***

Fear of the natural world, resulting from reliance on urban environments and spending time indoors (Delaney, 2021).

***Co-Facilitator***

Referring to a) the additional human facilitator and b) nature as a living entity and facilitator of therapy (Naor & Mayseless, 2020).

***Complex Post-Traumatic Stress Disorder (cPTSD)***

Chronic PTSD symptoms with longer than normal time duration, with intense psychological harm. Often seen in war veterans and survivors of childhood abuse (Veteran Affairs, 2023).

***Containment***

A therapeutic tool that provides boundaries, either metaphorically or literally, to help develop a safe therapeutic space (Alaimo et al., 2016).

***Deconstruction***

Breaking down the dominant discourses and the problem-stories to uncover its influence on a person's life (Prochaska & Norcross, 2018).

***Dominant Discourses***

The language and actions that have powerful influence and appear prevalently within a given society; the stories of our society that have taken hold. These behaviours and patterns of speech and writing reflect the ideologies of those who have the most power in the society, so many of them are enveloped in power dynamics, such as patriarchal society and capitalist systems (Thibodeaux, 2023).

***Eco Identity***

The client's relationship and experience with nature. This could be an adverse, receptive, or connected relationship, through indirect, direct, or vicarious experience, conducted with passive or active interaction. (Harper et al., 2019).

***Externalization***

A collaborative technique between client and therapist where the client separates the problem from their person and creates an entity outside oneself. This can be done through language forming, meaning making, and descriptive personification (Morgan, 2000).

***Food Systems***

The process of seed to consumption and the food production life cycle. Can be actively participated in by humans, especially farmers, gardeners, and therapists.

***Garden Therapy***

The intersection and integration of talk therapy, horticultural therapy, and learning food systems. A holistic term and a form of healing in a confusing world of nature- based practices.

***Holistic***

The acknowledgement that healing goes beyond the body and the mind; that external component, such as interacting with plants or yoga, should be incorporated into treatment plans.

There is no one right way to heal.

***Horticulture***

Garden and farm cultivation and management (Oxford Reference, n.d).

***Horticultural Therapy***

“A formal practice that uses plants, horticultural activities and the garden landscape to promote well-being for its participants”. HT has set goals with constructed objectives and

assessments, and sessions are carried out by professional horticultural therapists (Canadian Horticultural Therapy Association, 2024).

### ***Low Barrier***

Programs in counselling or any professional field that are available at a lower cost and have less exclusion criteria. Promotes inclusivity, welcomeness, and acceptance.

### ***Narrative Therapy***

Unique and subjective form of counselling. Narrative therapists believe that the story of our lives is created by our individual experiences, shaped over time by the influences of pre-set societal rules, otherwise known as the dominant discourses (Prochaska & Norcross, 2018).

### ***Nature-Based Therapy***

The umbrella term for all nature oriented professional practices. A therapeutic approach integrating healing components of nature into well established, evidence-based treatment modalities. Focuses on the relationship between the self and nature (CNIT, 2022).

### ***Place Attachment***

An attachment to a natural place that can form a secure attachment, mirroring feelings of safety, containment, and trust (Alaimo et al., 2016). This can provide nervous system regulation through positive, repeated interaction (Grahm et al., 2021; Kaplan, 1973)

### ***Post- Traumatic Stress Disorder (PTSD)***

A prolonged physical and mental response to a traumatic event. Symptoms last longer than a month, and can include reliving the event, avoiding triggers, negative thoughts and feelings, and hyper-arousal (Veteran Affairs, 2023).

### ***Postmodernism***

Theoretical framework suggesting that reality is subjective and shaped by unique meanings and interpretations (Shpancer, 2020).

### ***Practitioner***

Professionals following a standard code of practice, ethical codes, and/ or guidelines. Generally, individuals who are licensed to practice their profession and receive compensation.

### ***Problem story***

Stories of our lives that heavily influence personal narrative, creating little space for any positive moments or memories to be present (Prochaska & Norcross, 2018).

### ***Trauma***

“Exposure to an incident or series of events that are emotionally disturbing or life-threatening with lasting adverse effects on the individual’s functioning and mental, physical, social, emotional, and/or spiritual well-being” (Trauma-Informed Care, 2021, What Is Trauma?).

### ***Trauma- Informed***

A shift in language and treatment approach, changing the language from “what’s wrong with you?” to “what happened to you?” (Trauma-Informed Care, 2021).

### **Roadmap**

In Chapter 2, I will complete a literature review and explore some of the recent research pertaining to these modalities. This section will act as a catalyst in the formation of future research needs, helping to recognize missing gaps in the literature and the possibilities for growth. The first topic will be an overview of group therapy and trauma work. Following this will be a review of narrative therapy and its clinical application in working with trauma. A similar analysis will be conducted on horticultural therapy, taking an in-depth look at the theory in therapeutic practice as a nature-based modality and stand-alone practice. Examples of current

horticultural therapy models will be explored, including studies on community gardening for group development research. The final section will take look at current areas of integration between the two theoretical frameworks, including potential topics for group work.

Chapter three will conclude this paper by revisiting the research questions and determining the outcome of the literature review. I will discuss the limitations and gaps missing from this research, as well as areas of potential future research and personal reflections. Finally, I will be proposing the creation of a narrative garden therapy group, and providing an outline of design, guided by the results of the research.

## Chapter Two

Chapter two will cover the key concepts of this research, reflecting on the topics of interests and the relationships between them. A literature review will be conducted based on these concepts, discussing journal articles, narrative literature, and other sources of relevant information. Chapter two will begin with a brief overview of why group therapy may be beneficial for trauma survivors and healing. Then, the literature review will touch on the modalities of narrative therapy and horticultural therapy, and their practical application in trauma treatment. This research examines both modalities efficacy in supporting individuals who have experienced trauma and PTSD. As holistic, client-centered approaches, they are likely valuable tools for trauma-informed care, providing safe, grounding spaces for emotional expression and recovery. With many of these studies examining group settings, this research aims to provide evidence of group therapy's impacts on trauma healing. Horticulture may be helpful for those who struggle with talk therapy, those who are missing community, and are interested in skill development, or hands-on ways of healing. The integration of talk therapy practices allows for deeper therapeutic reflection and meaning to the horticultural benefits. The chosen modality, narrative therapy, aligns with the techniques and tools often used in a garden setting. As horticulture can provide the external work, narrative therapy can provide the internal processing.

### Group Therapy

As an overarching framework, this paper will first explore why group therapy is valuable for trauma survivors. Group therapy has commonly been used in the treatment for trauma and post-traumatic stress-disorder (PTSD) (Shuman et al., 2020). *PTSD*, defined as a prolonged physical and mental response to a traumatic event, and *trauma* itself, which encompasses emotional disturbances with lasting adverse effects, are conditions that deeply affect an individual's mental, physical, and emotional well-being (Trauma-Informed Care, 2021; Veteran

Affairs, 2023). Trauma can be an incredibly isolating experience, where a person may find it difficult to relate to others. Group therapy creates a space for trauma survivors where they can know they are not alone in their experience (Classen et al., 2020). In witnessing the healing journey of others, the impacts of other people who have experienced similar trauma responses can be validating and affirming of one's experience (Koganei, 2021). This in turn, develops a felt sense of community among group members, where relationships are formed, and collaboration takes place (Ibrahim & Tchanturia, 2017). The development of group norms is helpful in re-learning boundary setting and collective agency (Koganei, 2021).

Beyond the sharing of experiences, groups settings have further benefit for participants. Creative interventions, such as art, sensory activities and movement, may feel more accessible in a group setting, particularly for children (Shuman et al., 2020). When words feel limited, utilizing creativity allows for expression of painful memories, and provides choice and agency over the form of delivery. Through subjective meaning and interpretation, creative techniques are used in narrative therapy frequently, such as letter writing and the Tree of Life (Denborough, 2018). Likewise, horticultural therapy prioritizes creativity to support healing and utilizes sensory immersion, such as aromatherapy (Wajchman-Switalska et al., 2021).

With complex trauma, a person's internal of safety no longer feels present. Trauma alters the brain, to the point where the autonomic nervous system remains in a state of perceived threat, even when physically safe (Porges & Dana, 2018). To determine how group therapy could be impactful, Classen et al. (2020) explored somatic-based therapy to determine the efficacy in helping women with complex trauma. Thirty- two participants met for twenty group sessions, working to connect back to their bodies. The counsellors facilitated bringing of awareness back into the participants bodies by using yes or no questioning and utilizing the body as a source of information. Somatic check-ins and breathing exercises were used as forms of containment,

grounding participants to the therapeutic space. By using a group setting, the participants felt a sense of connection, helping with the feelings of isolation. Sensorimotor and togetherness was found to be beneficial in group format, leaving participants feeling resourced. Importantly, participants noted that noticing each other's impacts on their developing internal safety allowed them to feel more present within themselves and with others.

### **Narrative Therapy**

As this research is analyzed, it will be reflected through the lens of a narrative therapist. Narrative therapy was chosen as the talk therapy modality for this paper due to its potential alignment with the creative and experiential techniques seen in horticultural therapy. Both approaches emphasize personal meaning-making, growth, and co-creation, offering clients unique ways to reshape their stories and perspectives. Additionally, narrative therapy's innovative nature encourages a client-led process, making it culturally relevant and engaging for diverse populations. It has been used in both group settings and as a collaborative practice for working with trauma survivors. Given that narrative therapy remains under-researched compared to more evidence-based modalities, this exploration may contribute valuable insights to the field, expanding its empirical support and therapeutic potential (Heywood et al.,2022).

### ***History of Narrative Therapy***

A brief history and explanation of key features is important to understand how narrative therapy can relate to horticulture. The creation of narrative therapy was originally both inspired by and in response to Gregory Bateson and his team (1956), research regarding the "double bind" hypothesis, where family communication rooted in conflicting messages was connected to schizophrenia and resistance to change in family therapy. This theory attempted to explain elements of schizophrenia, such as disorganized thinking, as potential defense mechanisms in response to double bind situations. These situations were explained by how certain types of

communication within families could contribute to the development of schizophrenia, noted as repeated experience of contradictory interpersonal messages and unresolved conflict. The double bind theory historically highlighted the importance of how communication patterns within families and social systems could impact resistance to mental health treatment. even if it did not fully explain the origins of schizophrenia. With this communication theory in mind, Michael White and David Epston (1990) integrated their own ideologies and found that shifting the focus away from treatment resistance, and towards individualistic ways to overcome challenges, was found to be more helpful with clients who seemed to be dominated by the problems in their lives (Beels, 2009). White and Epston (1990) recognized that family communication can become rooted in dominant narratives and play a huge role in a person's belief system.

Narrative therapy is a distinctive form of postmodernism that emphasizes the subjective nature of life stories (Prochaska & Norcross, 2018). The experiences and interactions with societal norms, known as dominant discourses, shape these life narratives. Clients often go to therapy when they feel enmeshed with their problems and are experiencing low self-worth and diminished agency (Müller, 2024). The theory of narrative therapy dictates that people come to conclusions about who they are based on life events and how they are classified and adhered to identity. Narrative therapists believe that these stories can be altered, and that no reality is truly objective. They view each person's story as unique and resistant to simple categorization and aim to help find the value of life of someone's existence through finding alternative life stories from the client's experience.

### ***Skills Used in Narrative Therapy***

This section introduces the key skills involved in narrative therapy, offering a brief look at how this therapeutic approach helps clients reshape their stories. By exploring the general

process of narrative therapy, the groundwork is laid for identifying areas where these techniques may overlap with horticultural therapy and how they may be used in the treatment of trauma.

**Externalization.** A fundamental technique that separates the problem from the person, turning it into an external entity (Prochaska & Norcross, 2018). This is achieved through language reform, meaning-making, and descriptive personification (Morgan, 2000). For instance, shifting from an internal location of self-identity with the problem, such as "I am an anxious person" to an externally shifted location of identity, such as "I am a person who is experiencing anxiety", helps diminish the problem's control of the narrative and opens multiple new ways of self-description. Giving internal problems personified traits also allows clients to interact with and understand their relationship to their internal world.

**Metaphors and Meaning.** Central to the therapeutic process, metaphors are highly valued in narrative therapy. Client-led metaphors uphold the culture, language, and relevance of a problem, articulating them in a more abstract way, making problems easier to understand (Legowski & Brownlee, 2001). Through metaphors, there is an extension of subjective meaning onto something that can be understood by both the client and counsellor. As people try to make sense of who they are, life's events are constantly being interpreted, and in turn, meaning is attached to these events (Morgan, 2000). People often determine who they are, and what their lives have in store for them, based on the meanings they interpret. The weight of meaning, however, is inherently different for each life event. If a life event aligns with an assigned narrative of identity, the meaning behind the event will carry more weight.

**Co-Creation and Re-Authoring.** Experiences can hold a lot of power (Müller, 2024). Alone, personal narratives that are problem saturated can take on a life of their own, making them difficult to work through. Therapy can provide a setting where shared observation of these stories takes place, providing space for collaboration and new perspectives (Morgan, 2000). In

co-creating an alternative narrative, clients can move away from their thin, problem-saturated description of their lives towards a more developed, thicker self-narrative (Goldenberg et al., 2016).

To help deconstruct the dominant discourse that people carry, the view of problems is often shifted towards being a product of socio-economic environments and cultural messages (Morgan, 2000). To re-author their stories, clients must deconstruct these discourses, creating new meanings and interpretations, which empowers them to reclaim and reshape their identities. Therapists also highlight "unique outcomes" or exceptions to dominant discourses, focusing on moments that deviate from problem narratives (DeKruyf, 2008). Re-authoring allows counsellors to help reveal client agency, to build meaning, and to discover the unconditional value of life (Müller, 2024). Letter writing further reinforces these unique outcomes, helping clients challenge dominant "truths" (Morgan, 2000). To best honour a client's language and creativity, these letters can also be in the form of poetry (Müller, 2024).

**Bearing witness.** "Outsider witness" refers to an invited audience for the purpose of sharing in one's therapeutic experience, allowing for others to learn, understand, and build togetherness (Butera-Prinzi et al., 2022; Carey & Russell, 2003). Particularly occurring in group work, bearing witness is a powerful form of ritual to end the therapy and invite someone's newly found preferred story into the world. This increases the likelihood that the person receiving therapy will connect their therapeutic process to their daily life. Audiences can be a loved one, a group member, or another therapist, and the intention is to bring forward curiosity about the new narrative, and to share how they were inspired by the person's story (Carey & Russell, 2003).

### *Narrative Therapy Application*

In essence, the core belief of narrative therapy is expressed as "you are not the problem; the problem is the problem" (Morgan, 2000, p. 17). The therapist's role with clients is to help

them regain control of their narratives, by providing space and tools to recognize themselves as the authors of their lives. By making clients aware of the messages their problems convey, therapists assist in externalizing problems, personifying issues and treating them as separate entities that can be interacted with (White & Epston, 1990). Clients are empowered to move from a thin description of themselves, to choose and re-author their identity, towards a thick description, encouraging alternative narratives (Morgan, 2000). This approach emphasizes the client's agency and control over their narrative. Therapists support this process through letter writing and highlighting unique outcomes, without imposing guiding principles.

### ***Working With Trauma***

This core belief particularly important for clients who have been heavily impacted by trauma. In the personal reflection of social worker Joanna Bayes (2023), she shares her experience with the traumatic event of falling off a balcony and incurring severe injuries that drastically changed her way of life. Noting how this trauma had disrupted her life, Bayes explains how trauma changes the life's story. She explored her new narrative of pain, despair and hopelessness, and the identity of a broken body which now consumed her. The story of pain and recovery became her life through the struggle of healing and of not wanting to give her body over to the medical doctors. The learning of her sleepwalking disorder created an additional narrative, identifying with risk and disability. Bayes (2023), unable to recall the sequence of what had happened, did her best to piece together the missing parts.

Narrative therapy enabled her to develop an understanding of what had happened to her, through empowerment and agency restructuring, to recover other parts of herself (Bayes, 2023). Working through this trauma, she acknowledged the time it took to integrate the trauma story into life, to reflect on her response to the event, and to re-create her sense of self. Butera-Prinzi et al. (2022) responded to this story, connecting with Bayes on how she impacted their lives. This

meant she was no longer alone in her trauma healing. Through externalization, it was discovered how the trauma has enmeshed with the person and where societal discourse had influence on the narrative (Morgan, 2000; Thibodeaux, 2023). Then, through co-creation, they begin to separate the person from the impact of the trauma. In re-authoring, they listen for moments of empowerment, strength, courage, that push against the trauma narrative, helping to establish that the person has worth, purpose and meaning (Müller, 2024). The sharing of this experience, a key factor of narrative therapy, allowed those in her life to bear witness to her and to value the difficulties as well as the strengths in someone's experience (Butera-Prinzi et al., 2022; Carey & Russell, 2003).

### ***Narrative as a Combination Modality and Trauma Treatment***

As a therapeutic intervention for trauma and PTSD, narrative therapies' primary limitation is that the individualistic characteristics of the modality result in limited available research (Prochaska & Norcross, 2018). However, as a combination modality, narrative therapy is researchable and quantifiable, providing evidence of how narrative techniques could be flexible enough to result in successful application. Although ultimately holding little regard for narrative ethics, this has led to an increase in quantifiable effective treatments for trauma and complex PTSD (cPTSD) (Cloitre & Schmidt, 2015). This section will explore and analyze several studies researching narrative combination therapies in the field of mental health. Examples of how narrative therapy has been used in a group setting in the next section will provide further evidence for its flexibility and application as a potential catalyst for a narrative gardening therapy group.

One integrative model designed by Cloitre et al. (2006) to treat childhood abuse and trauma is Skills Training in Affective and Interpersonal Regulation (STAIR) Narrative Therapy (SNT). SNT is a structured sixteen-session process combining the therapeutic goals of skill

development and emotional regulation with elements of narrative practice (Cloitre & Schmidt, 2015). It has been found to be an effective treatment for individuals with PTSD and complex PTSD (cPTSD). One study examined SNT's success in alleviating cPTSD symptoms, such as "affect dysregulation, negative self-concept, and disturbances in relationships", in a group of women in Japan (Niwa et al., 2022). The narrative component was an adapted form of prolonged exposure therapy that emphasized working through the emotions tied to traumatic memories and the discourse that emerged, understanding the patterns in their relationships that have developed because of these experiences. The study also highly valued narrative therapies' flexibility of scheduling, so depending on the client's specific needs, up to twenty-five sessions were offered. Through emotional processing, clients worked to identify their sense of self in relation to the trauma, and findings showed a significant decrease in their cPTSD symptoms. The limitations of this study were consistent with narrative's typical shortcomings, such as a small sample size, lacking a control group and inconsistent therapeutic training history (Edgar et al., 2022; Heywood et al., 2022).

Another trauma-informed combination modality is narrative exposure therapy (NET). NET was originally created to treat PTSD in survivors of war, abuse, and torture, and combines imagined exposure with meaning making and reclamation over autonomy, dignity, and validation of human rights violations (Schauer et al., 2005). NET is an approximately sixteen session, step-by-step process working to re-author survivors' trauma stories and turn lost or fragmented components of an experience into a developed narrative. The therapist maintains safety during this process by continuously connecting the client back to the present, while facilitating the narrative techniques of de-construction, meaning making and emotional regulation. This approach, which utilizes oral narratives and imaginal exposure, has been shown

to significantly reduce trauma symptoms, enhance personal understanding, and improve overall health and functionality.

In a study involving treatment of cPTSD in homeless and vulnerable populations in Ottawa, the researchers conducted as little as six sessions, mentioning that the researchers wanted to “see if it was feasible to recruit and retain people who were homeless for therapy” (Edgar et al., 2022). Where curiosity lies is what happened after the six sessions were completed, and if any of the participants were left facing re-traumatization without more sessions. As NET was designed for a longer duration, it would be important to note where this left participants, and to highlight any potential gaps in trauma-informed treatment for the homeless population. The study did expand on the feasibility of conducting NET for homeless individuals in Ottawa, revealing that while engaging and retaining participants was challenging, it was achievable. Barriers they faced included a shortage of trained therapists in NET and the impact of the COVID-19 pandemic, which halted recruitment. Additionally, the high dropout rates before therapy started indicated difficulties in engagement and trust issues, potentially due to past trauma. It was noted that the researchers assumed many of their participants had experienced significant trauma, including abuse and neglect, which could decrease trust in the researchers. This lack of trust, possibly compounded by negative past experiences with health systems and social services, made it challenging for them to engage with new therapeutic processes. The study addresses the need for trauma-informed practices and increased therapist training to improve future large-scale trials. The findings suggest that NET might effectively reduce PTSD symptoms, though further research is needed to assess the therapy’s efficacy and optimize its delivery. The curiosity remains around the ethics around treating complex trauma in a set time frame and how effective it is without long-term care.

A possible reason for the quantifiability of SNT and NET data is that they are both considered brief forms of therapy, and studies with set time periods can be easier to track progress and be more widely accepted by insurance companies (Prochaska & Norcross, 2018). For example, in Niwa et al. 's (2022) research with STAIR and cPTSD, they were able to use quantifiable forms of data from selected questionnaires, such as the International Trauma Questionnaire and Childhood Trauma Questionnaire and track their client's progress from beginning to end. In the NET study, the short duration made for easy data collection (Edgar et al., 2022). When it comes to determining the time-frame effectiveness of a future therapeutic group, these results are worth taking into consideration for analyzing client progress and obtaining insurance, while still holding true to narrative values and ethical practice.

### *Narrative Group Therapy*

Of further note, there has been success in narrative therapy group work for trauma survivors. The act of sharing and communicating with others has been helpful in supporting change and developing group goals for healing (Ibrahim & Techanturia, 2017). For example, in a narrative therapy group supporting those experiencing eating disorders, specifically anorexia nervosa, the externalization of the dominant discourse around body image and the disorder itself. The group utilized the Tree of Life, a creative art technique designed as a trauma treatment that embodies the spiritual, ecological and symbolic imagery of life (Denborough, 2018). The Tree of Life can hold one's trauma and grief, while simultaneously bringing to life what words cannot express. In their narrative group therapy, Ibrahim & Techanturia (2017) found that this visualization was a helpful keepsake for participants and allowed for non-verbal explanations. The group format paved the way for an openness for alternative perspectives to enter their personal narratives, sharing and building a sense of community.

Other narrative therapy groups have used the Tree of Life in their scope of practice. Koganei et al. (2021) shared their study with a group of seven Japanese women, aiming to help them reconstruct their narratives and find affirmation through community participation. The article explained that women in Japan often face conflicting societal expectations in balancing traditional roles with modern career goals, leading to feelings of anxiety and depression. This added cultural complexity creates challenges in forming a cohesive identity. This group, called "Take Back My Story", had participants drawing their Tree of Life to reflect on key life elements, including their past, strengths, and available resources, while sharing their stories with the group. Group rules emphasized full attendance and mutual support. Activities included free writing to explore the influence of problems, re-authoring through personal storytelling, and sharing experiences for integration and witnessing. Despite these interventions, participants experienced anxiety, particularly in the initial session, due to sharing personal challenges. It was recommended by the researchers to increase emotional support and time dedicated to externalizing problems and reconstructing stories to enhance safety and the therapeutic process. This highlights the importance of longer group durations to foster a sense of safety and attachment, and to allow for deeper narrative exploration. This development of building attachment will be further explored in the horticultural therapy section.

### *Ethics*

There is critique around the ethics of narrative research not integrating the core belief of the therapy, that clients are the experts of their own lives, and that the therapist is there as a collaborator and encourager of free-will (Morgan, 2000). In an intervention with a set time frame, such as the combination narrative practices explored in the therapeutic application section, it is up for debate whether it is ethical to dictate how many sessions a client has. The ethics of narrative studies is further noted in the Heywood et al. (2022) meta-analysis

highlighting a lack of uniformity amongst techniques, missing ethical practices and small sample sizes. They suggest that, despite a few narrative interventions being replicated across research, such as deconstruction and externalization, only a handful of studies address important ethical considerations, such as client safety, culturally relevant language, and identity shifts. They note the potential biases that can show up through the therapist's interpretation of the results, increasing the risk of inaccuracies.

Where horticultural therapy and narrative therapy find overlap is that there is a logistical ability to stick to similar values, providing a potential solution to these ethical inquiries. As no two gardens are ever the same, creative innovation may hold the key to quantifiable research. As narrative research often falls victim to practitioner bias, Penwarden and Richardson's (2020) article explores an ethical narrative solution for research that honours the client's culture, language, and personality while maintaining a postmodernist lens, and still allows for the creation of session transcriptions for research. Through poetry, the client's syntax, way of speaking and cohesiveness is preserved, and the beauty of unique client outcomes is upheld (Müller, 2024; Penwarden & Richardson, 2020). This form of data collection could be beneficial for this under-researched therapy while still maintaining proper ethical considerations.

### **Horticultural Therapy**

This scope of research aims to understand the foundation of horticultural therapy, looking at examples, ethical practice, and the contributing factors to the field of trauma work. As there is currently minimal research on horticultural group therapy, this section will also review the efficacy of community gardening in fostering social bonds for the purpose of future development of therapeutic gardening groups. This section will act in advocacy for the integration of horticultural therapy into clinical counselling practices, supporting its recognition as an evidence-based therapeutic modality. This research also seeks to contribute to the ongoing

collective efforts to develop and secure practitioner insurance for nature-based therapies, further professionalizing and expanding the field.

### ***What Is Horticultural Therapy***

*Horticultural therapy (HT)*, a branch of nature-based therapy (NBT), utilizes gardening as a platform for various mental health services, including physical and psychological rehabilitation (Haller, 2021). These services range from vocational skill development and behavioral healthcare to long-term care and overall wellness programs. The versatility of HT allows it to be implemented in diverse environments, from farms to clinical hospitals, with a core focus on fostering a connection with nature. This accessibility makes gardening a low-barrier therapeutic intervention. HT is built around four key elements: the client, the trained practitioner, plant cultivation, and therapeutic goals and objectives (Haller, 2017; Haller, 2021). For this literary research, HT refers to a practice with specific treatment outcomes, distinct from the less-goal oriented therapeutic horticulture (Canadian Horticultural Therapy Association, 2024). Established in 1973 and 1987 respectively, the American Horticultural Therapy Association (AHTA) and the Canadian Horticultural Therapy Association (CHTA) emphasize the importance of HT within the broader context of NBT. *NBT* focuses on therapeutic work within natural environments, considering both the physical space and the sense of place, which includes the emotional and contextual significance of the environment (Segal et al., 2021). The sharing of the therapeutic experience forms relationships between the individual, the natural environment, and all involved elements are central to the therapeutic process, guiding and enhancing the healing experience.

Relationships can be formed by either passive or active involvement with nature. Immersing oneself in the environment through sensory experiences, such as observing flowers and plants, engaging in aromatherapy, or birdwatching, dictate a passive form of relationship

building (Wajchman-Switalska et al., 2021). A place to bond with, or "sit spot", can also facilitate this connection with a specific place in nature that is easily accessible and revisited regularly (Delaney, 2021; Jones & Segal, 2018; Joschko et al., 2023). This could be a nearby community garden, a botanical garden, a maintained flower patch in a park, or a therapeutic gardening center. The key is to feel safe and to build a trusting attachment to a particular place where you can immerse yourself in sensory awareness, self-reflection, and self-regulation. Simply observing the plants in their changes over time, their responses to seasonal transitions, and their cycles of dormancy and growth can provide powerful healing opportunities and endless metaphors (Mukarusanga, 2020). The benefit of a passive horticultural relationship will depend on the individual and their circumstances. Some may lack access to a garden plot, others may face psychological or physical challenges that make active gardening difficult but could still benefit from sensory immersion (Alaimo et al., 2016; Wajchman-Switalska et al., 2021). Some individuals might not feel ready, comfortable, or confident enough to start gardening actively and may prefer to begin as observational learners.

For others, an active relationship is more applicable within their horticultural therapy experience, centered around garden-based activities, such as digging, weeding, planting, and harvesting produce (Alaimo et al., 2016). This hands-on approach is typically thought of when imagining horticultural therapy as building a relationship through action. When it comes to the nature-client relationship, it remains imperative to watch for practitioner bias in facilitating this relationship. Natural spaces are not for everyone, as explained in the key terms by biophobia, and therefore it is important to explore the client's eco identity and establish their comfort level, creating a unique approach that could encompass vicarious, indirect or direct sessions with nature (Harper et al., 2019).

### ***Why Do We Feel a Relationship?***

The theory of attachment can help to explain why we feel a relationship with nature. Attachment to a particular place can provide a greater sense of wellbeing, a place you can turn to when you're feeling stressed (Joschko et al., 2023). It is like John Bowlby and Mary Ainsworth's theory of attachment in that the relationships formed with caregivers in early childhood have an intense and significant influence on the way relationships are formed with others (Bretherton, 1992). Developing an attachment to a natural place can provide a form of secure attachment, mirroring feelings of safety, containment, and trust (Alaimo et al., 2016). This place attachment can even provide nervous system regulation, because nature can co-regulate with you (Grahn et al., 2021). A garden can act as a place rich in pleasing sensory experiences, and there is a proposed biological encoding stating that through stimulating the senses positively and repeatedly, we begin to feel attachment to that place. Containment, whether metaphorically attaching meaning to a raised bed, or literally, such as walking through vine-covered pergolas or enclosed spaces, promotes safety and provides a structured environment where clients can explore and begin healing at their own pace (Alaimo et al., 2016).

Research indicates that human responses to nature activate key physiological systems, particularly those controlled by the limbic brain, including the hypothalamus (Grahn et al., 2021). Two crucial systems are involved, the first being the stress system, which encompasses the hypothalamic-pituitary-adrenal (HPA) axis and the sympathetic nervous system, regulating cortisol and triggering the "fight or flight" response. In a trauma response, this part of the brain can be altered and stuck, decreasing a person's internal safety. The second system is the anti-stress system, which includes the oxytocinergic system and the parasympathetic nervous system. The latter stimulates social bonding, reduces stress, and promotes healing by enhancing the "calm and connection" response. Patrik Grahn's Calm and Connection Theory (2021) builds on

this understanding, suggesting that natural environments that provide peace and security stimulate the release of oxytocin, a hormone that exerts powerful anti-stress effects (Carter et al., 2020). Oxytocin decreases stress by lowering activity in the HPA axis and the sympathetic nervous system, thereby reducing cortisol levels, while simultaneously increasing activity in the parasympathetic nervous system. This cascade effect is said to deepen the connection to nature, support psychological growth, and aid in developing effective coping strategies, such as self-regulation in calm and safe natural spaces (Grahn et al., 2021). With this theory in mind, time in nature may be helpful for processing trauma and increasing internal safety.

### ***Horticultural Therapy as a Trauma Treatment***

With ever growing evidence, gardening, plants and green spaces exposure has been proven to improve mental health and wellness (Thompson, 2018). However, there is seemingly little research on its effectiveness for working with trauma and PTSD, and apparent gaps have revealed themselves in research of the long-term impacts. Gardens have a long history of being used as mental health treatment, notably for veterans after WWI (Davis, 1998). Nature-based therapies can offer potential relief with various outdoor programs providing alternatives to pharmaceutical treatments. Nowadays, it seems that horticultural therapy is not the go-to treatment option for war veterans with PTSD (Mottershead & Ghisoni, 2021). To better understand what options are still available for veterans, Derrien et al. (2020) conducted research involving interviews with outdoor organizations promoting the role of horticulture as therapy and created a database of resources for veterans. This database includes details on the logistics and focus of programs, such as horticulture and their specific aims to address PTSD and other challenges. A collective finding from the interviews is the symbolic connection veterans feel with the land they served to protect, underscoring the deeper relationship-building potential of land-based therapies. However, the research noted a lack of scientific evidence regarding the

impact of these programs on PTSD in the long-term, and that there is a missing standard of practice among organizations. To bridge this gap, Derrien et al. (2020) suggests using direct observation to further research and develop new case studies.

Another important study highlighted the connection between gardening, eating food, and trauma recovery. Mottershead & Ghisoni (2021) conducted group research for veterans living with PTSD and non-pharmaceutical treatments. This shared collective experience brought forward the idea that growing and eating food together enables the veterans to have increased mood, improved nutrition, reduced isolation and increased physical wellbeing. The researchers explain that when veterans can get outside in the natural world, their stress is reduced and their cognitive function is improved, which can help them return to a home life after combat. This study truly defines what “holistic health” should be, with the inclusion of care for the body, mind, and soul.

Societal integration after war trauma, whether within one's own country or as a refugee, is highly challenging. Poulsen et al. (2020) examined how a nature-based group therapy program influenced the mental health and employment readiness of twenty-eight asylum seekers in Denmark, who were initially deemed unprepared to enter the labor market. It also examined the impact of war-related trauma, specifically PTSD and complex PTSD, on the process of integrating into a new country (Ipekci, 2023). The research focuses on the eco-village project known as GROW, conducted over three years in Hallingelille (Zealand). This initiative involved an eight-month vocational horticultural therapy (HT) program designed to bridge the gap between trauma and employment. The eco-village aimed to reduce stress and was grounded in principles of stress reduction and community integration, like that of Nacadia (Sidenius et al., 2017). Participants engaged in activities like gardening and meal preparation with fresh produce, which were intended to address stress, build community, and develop work-related skills. The

study highlights that horticultural therapy within a natural setting fostered a sense of safety and allowed participants to access positive memories, reducing feelings of isolation. However, it also noted that while horticulture contributed to skill building and confidence, it did not uniformly impact all participants. The sense of community and social interaction with village residents emerged as significant factors, though sometimes insufficient to separate participants from their trauma memories. Confidence building through horticulture helped shift participants' narratives, with varied effectiveness.

The findings underscore the importance of establishing safety before connecting positively with a new environment, consistent with other nature-based studies on place attachment (Alaimo et al., 2016; Joschko et al., 2023). The program's ability to aid in attention restoration and its potential benefits for PTSD are noted, but the study also acknowledges that the western approach of direct discussion and concern addressing might have limited its effectiveness in this context. Overall, the study demonstrates that while horticulture can support integration and employment readiness, challenges remain in overcoming the deep-seated trauma of displacement.

### ***Community Gardens and Group Therapy***

Due to limited horticultural group therapy research, an alternative review of community garden studies were explored. This was decided because a felt sense of community was determined as important to the efficacy of group therapy (Ibrahim & Tchanturia 2017). This literary understanding will assist in creating the therapeutic gardening group in chapter three.

At its most basic level, a community garden is defined as a collective growing space that is serviceable to multiple families and are generally used for personal consumption (Alaimo et al., 2016). Community gardens have been found in a variety of spaces, including schools, parks, neighbourhoods, and even health care facilities and hospitals, and provide space for people

interested in gardening who do not have any other forms of access (Alaimo et al., 2016). Exposure to nature outside of potted plants is also thought of to be a benefit of community garden spaces (Koay & Dillon, 2020). As a place where food production and socializing come together, community gardens can often be thought of as a hub of shared purpose and community-based health intervention, where the sharing of knowledge and produce can develop diverse interpersonal relationships with other gardeners (Northrop et al., 2013). The question remains however if there are real benefits to community gardening, and if these benefits differ from solo gardening. This section is also looking to answer whether understanding community garden research will help inform the creation of a therapeutic gardening group.

**Sense of Community.** To explore these potential differences, one study explored whether a shared garden space in an apartment complex reduced stress and increased a sense of community. Lee et al. (2021) research consisted of three small groups, totaling thirty-two participants, and was implemented as a response to resolve an increase in conflict in three different apartment buildings in South Korea. One group focused on creating a sense of community through gardening, one group focused on education only, and one control group did not participate in any program. The community group followed the guidelines of theory proposed by McMillan and Chavis (1986) which identified four major criteria for building a sense of community: membership, influence, integration and need fulfillment, and shared emotional connection. The community group program included elements to promote this criterion, such as uniform gardening gloves, rule-setting, sharing of harvested crops, needs inquiring, group expectations, and time spent together in gardening space. Results showed the program focusing on building a sense of community increased perceived community connection, highlighting that a holistic approach resulted in more holistic results.

The study had its limitations, most notably the difference in attention to design detail of the community-based gardening program compared to the education-based program, such as limited décor and containment features. There is importance in the design of gardening spaces, resulting in curiosity of how much of the decreased sense of community was a result of other factors (Wajchman-Switalska et al., 2021). Sense of community dropped in between pre and post testing for the horticultural education group. It would be important to review how the sessions were conducted and if there were any biased forms of communication that may have subconsciously attempted to not create a sense of community, as it seemed surprising that despite gardening together, the education group did not experience this sense of community.

**Resilience.** Similarly, Koay and Dillon (2020) conducted research in Singapore to determine whether levels of subjective wellbeing and resilience were higher amongst community gardeners compared to at home gardeners. Through a community gardening initiative called “City in A Garden”, efforts were made to understand the mental health impacts of community gardening on Singapore’s citizens. The researchers wanted to close the gap in the current research, as much of what was available was qualitative in nature, to learn about resilience, self-esteem, optimism, and openness. The three groups, including community gardeners, at-home gardeners, and non-gardeners, participated in some form of outdoor activities. Results showed that community gardeners were more likely to report a sense of well-being and resilience. The vetting process of non-gardeners was not strict, meaning that the type of outdoor activities ranged widely. Relationships with nature were assessed, and there were no significant differences in perceived stress amongst groups, potentially due to the general benefits of nature (Joschko et al., 2023). Subjective well-being highest amongst community gardeners, potentially due to the added socializing factors, however resilience was the same between at home gardeners

and community gardeners, hinting that the benefits of the act of gardening outweigh the effects of socializing.

To understand the impact of gardening on mental resilience more deeply, it is of interest to note that further study has been done in Singapore during the presence of Covid 19 to assess if resilience was still attainable during an extremely unprecedented and unpredictable time of decreased community interaction. In review of additional studies regarding interaction with nature and mental resilience, Sia et al. (2022) explored the impact of home gardening, as covid interfered with the ability to be with nature outside of the home, comparing those who had edible gardens vs. those from an online community related to Covid 19 care. In densely populated Singapore, social distancing became necessary, which increased the risk of loneliness. An initiative called *Gardening with Edibles* was launched in June 2020, offering free seed packs and online resources. This program attracted over 300,000 participants, with around 42,000 completing surveys. These surveys collected data on factors such as age, housing type, time spent gardening, and cultural and religious implications.

5,700 individuals were included in the gardening group of this study due to various exclusion criteria. A community care group, unrelated to gardening, included about 1,800 responses. Both groups were assessed on seven resilience factors: emotional regulation, spirituality, relationships, confidence, positive thinking, control, and flexibility. The median age of the gardening group was nearly 20 years higher than that of the community group. Interestingly, no housing data was collected from the community group, leading to questions about accessibility to green spaces or potted plants for those participants. Over half of the gardening group reported spending 1–4 hours per week gardening. Across both groups, higher mental resilience scores were observed in older age ranges, suggesting that younger individuals

struggled more with staying home and reducing social engagement. Additionally, participants living in landed homes spent more time gardening, and this correlated with older median ages. Interestingly, gardening showed no effect on the resilience factors of control or flexibility. This might have been influenced by the unique circumstances of the COVID-19, although other pandemic studies linked gardening and connection to nature with improved control (Pouso et al., 2021).

### ***Mental and Physical Health Impacts***

In exploring the connection between physical health and mental well-being, an understanding can develop of how interactions with soil and plants contribute to personal narratives of health and resilience. This section is included to provide a well-rounded, holistic approach to healing and to include a biological perspective, enriching the meaning-making process in re-authoring narratives.

**Microbiome.** As part of the commitment to a holistic mental health intervention, it was determined that a brief understanding of gardening's impact on physical health would be beneficial. One of the ways gardening interacts with health is through the microbiome, which exists both inside the body and in the ground. The gut microbiome is understood to be heavily shaped by diet, impacting the immune system and wellbeing (Thursby & Juge, 2017). Microbiotas vary between individuals and even vary day to day, which can be greatly impacted by diet. Exposure to bacteria is important, creating what is known as the superorganism, and helps with wound healing, cell renewal, homeostasis, and much more. Since there is an apparent connection between gardening and mental health benefits, research has also been conducted to find a link between gardening and gut health (Alaimo et al., 2016). A soil ecosystem can be compared to the gut ecosystem, with a large variety of bacteria, fungi, nutrients, and their metabolites (Gascon et al., 2020). It remains unclear whether the diversity of the microbiome has

specific health benefits, however, there does seem to be a correlation between eating diverse produce and having a diverse gut microbiome. In a study examining the gut microbial composition of rural living families, who primarily ate produce from their own garden, a greater microbiome diversity compared to non-gardening families (Brown et al., 2022).

Historically garden and human microbiomes have evolved together (Brown et al., 2022). Agriculture wound up changing the microbial composition because humans have changed the way they interact with nature. Today, the interaction mostly comes from consumption of produce, rather than from cultivation. Brown et al. (2022) study aimed to find a connection between gardening family's fecal samples and soil microbiomes. At its peak, the more significant findings with one gardening family at their highest proportion of soil bacteria found in their fecal matter was at 23%. This family gardened over 5 hours a week and ate their own produce every day. Across the board, gardening families also tested having higher levels of iron, folate, vitamin c, vitamin k, selenium and fiber. A limitation of study was nearly the entire group of gardener participants were white and well educated.

Gascon et al. (2020) conducted a similar study examining the gut microbiome of individuals using community garden plots, with participants who had reported not having gardened for at least two years prior. A potential factor that made this research difficult was soil consistency. The soil was tested and confirmed safe according to the USA government, however further research would need to be conducted to examine what is determined safe compared to other countries. This study also occurred in urban, low-income areas of Denver; it would be curious to note any implied biases or comparison levels of allowable soil chemicals and pesticides compared to organic farmland in middle- or upper-class neighbourhoods. This study found that participants reported positive responses to support, education, skill development and socializing. However, they reported negatively on safety, tools, and soil quality. For future

research, it could be recommended to suggest gloves to those who did not enjoy getting their hands dirty, noting that in this study, glove use may have been discouraged to better understand microbial transfer. Overall, there were reported microbial similarities between the gardening participants' fecal matter and the soil, specifically the bacteria Verrucomicrobia, found in abundance in soil (Tasnim et al., 2017). However, there were little similarities reported on the gardener's skin, which may have been due to hygiene practices, such as hand washing, which can disrupt the body's natural microbial composition (Brown et al., 2022).

This research can help inform horticultural therapists understand the holistic effects of gardening, and to inform best practices around eating grown produce, wearing gloves and protective gear, and how frequent to recommend hand washing after gardening (Gascon et al., 2020). Whether wearing gardening gloves will impact the transmission of bacteria seems to be both an ethical and science question. As a therapeutic tool, gloves can aid in containment, a helpful tool in trauma work for creating a therapeutic space (Lee et al., 2021). For physical health, one study conducted by Mhuireach et al. (2023) aimed at discovering if soil bacteria stay on a gardener's skin after contact. The study showed that this was the case, however most of the bacteria did disappear after twelve hours of no contact. The researchers hypothesized that implementing a daily gardening routine, with frequent exposure, could have a positive health impact. Whether or not the transmission is long-lasting and whether wearing gloves impedes this transmission is yet to be determined.

**Attention-Restoration Theory.** In this modern world, there is risk of leading an over-urbanized lifestyle, potentially resulting in increased mental and physical illness and chronic disease (Lui et al., 2024). Urban environments can be overstimulating, and have been known to increase cognitive fatigue, and difficulties concentrating (ProgressPro, 2022). This, in turn, can have a direct impact on trauma by decreasing one's ability to remain in the present. In response

to this, Stephen Kaplan (1995) put forward the theory that time in natural environments can restore attention spans and help reduce the impacts of cognitive fatigue. This theory, called *attention restoration theory* (ART) suggests that spending time in nature elicits feelings of pleasure, increases the brain's ability to function and to pay attention, allowing us to slow down. The theory's stages were developed by Stephen and Rachel Kaplan (1989), forming four states of attention to move towards restoration; a) clearing one's mind for concentration; b) mental fatigue recovery; c) facilitating a soft fascination; and d) reflection and restoration (Ackerman, 2018). The environment needs to be a compatible level of comfort for the person's relationship with nature, meaning time in nature can be beneficial regardless of whether its direct, indirect, or vicarious. Independently, Rachel Kaplan (1973) previously promoted a similar theory regarding gardening as an activity that encourages curiosity, engagement, rest, and recovery. Gardening provides these mental health benefits through voluntary attention, focusing on an outdoor activity that takes up a lot of brain power, reducing worrying thoughts and supporting mindfulness.

Some critiques of ART state that the theory is not clear on its definitions, which may be due to there being little empirical evidence (Liu et al., 2024; ProgressPro, 2022). This is changing, however, with an increase in more recent studies (Ackerman, 2018; Liu et al., 2024). Lui et al. (2024) conducted research to find new ways to implement this theory, breaking down the types of environments deemed the most restorative and in alignment with the theory, and whether artificial nature had the same effect. Hybrid natural spaces, such as parks, were found to be helpful in cognitive restoration. There are still very little evidence supporting indoor nature spaces, and the researchers suggest further study to be conducted with different sensory stimuli, more diverse sample populations, and by creating more strict guidelines for natural architecture.

**Rhythm and Regulation.** Tuning into nature's rhythms can work by participating in the co-regulation of the nervous system, helping individuals restore balance and regulate emotional responses (Grahn et al., 2021; Segal et al., 2021). A helpful tool for calming the sympathetic nervous system, nature's natural rhythms promote a sense of peace and can help individuals build a tolerance for discomfort and traumatic memories. Joseph Cornell's (1989) four-stage model of "flow learning" offers a framework for engaging with nature's rhythm, beginning with awakening enthusiasm, where initial interest and meaning are sparked. This is followed by focusing attention, a stage that enhances sensory awareness and focus, similar to attention restoration theory (ART) (Kaplan, 1995). The third stage, direct experience, encourages full sensory engagement with nature's rhythms, fostering self-efficacy through care for basic needs. The final stage, sharing inspiration, allows for reflection and storytelling, passing along meaningful experiences that emerge from moments of stillness and admiration in nature. This model helps us to see how nature can help create a pathway for nervous system regulation and emotional growth. Similarly, in narrative therapy, meaning making and storytelling are used as powerful tools for re-authoring one's experiences and finding new perspectives (Legowski & Brownlee, 2001; Müller, 2024). The sharing of inspiration in Cornell's model mirrors this process by encouraging individuals to share their new narratives with an audience. This overlap provides some evidence for the developing alignment between nature-based approaches and narrative therapy.

### ***Trauma and Rituals***

With the repeated means of access and development of place attachment through horticulture, the garden can form into a safe space to form rituals (Daniel, 2023; Kaplan, 1995). Rituals have been known to be helpful for trauma recovery, and understanding the relationship between trauma and rituals can show how these practices help individuals regain control over

difficult situations. This can take place as symbolic interaction with green spaces (Naor & Maysseless, 2020). Taking on a gardener role allows one to gain some control over these interventions and meanings, while still holding space for the uncontrollable. In looking at an example about grief and loss, the use of rituals is encouraged to help regain a sense of control and empowerment over a traumatic incident and problem-oriented narrative (Daniel, 2023). The article explained how the use of rituals can provide a space for the intersection of culture, spirituality, and creativity, and allow for practitioners to become more culturally competent. This concept could be broadened to the co-facilitation of nature as a component in meaning-making. The article describes a case example concerning Nick and Lucy, who had experienced the death of a puppy in a tragic car accident. The traumatic narrative became an intruder in their daily lives and had taken over control of their healing journey. Through Daniel's (2023) reflection it was determined that through a symbolic burial ceremony in their backyard garden helped the couple be able to regain control of their grief. The couple processed through the ritual of gardening, where their beloved dog was symbolically buried in their garden, and new life could now grow from the loss.

Rituals have a ceremonial component of healing and coming to terms with loss, or of celebration (Morgan, 2000). In a story of profound healing, Badruddoja (2022) shares her experience of immense trauma and recovery, looking past westernized ways of being in grief to process the loss of her children. She provides a voice in research where they are missing, of BIPOC women of colour, to provide a deeper understanding of this narrative. She speaks of the rituals and the understanding of teaching and knowing of the ways rituals reconnect us to the relationship with life and death cycles, in collaboration with earth. Badruddoja (2022) explores themes of personal and collective healing through spiritual, artistic, and cultural practices, and the intersection of land, identity, and trauma. The narrative article emphasizes how embodied

experiences, rituals, and land acknowledgment are tools for processing trauma, connecting with ancestry, and challenging colonialism. As another layer of trauma recovery, these articles articulate how ceremony can support the healing process and enable other methods of ritual, such as gardening, to take place.

### ***Therapeutic Garden Design & Accessibility***

In a therapeutic setting, horticultural therapy is conducted by a clinical counsellor, a social worker, a horticultural therapist, a nurse, or another type of mental health professional (Canadian Horticultural Therapy Association, 2024). This is likely someone who is trained to use therapeutic interventions, specific goal setting or wellness objectives, progress tracking and note taking, trauma-informed care, and of course, gardening experience. To be considered horticultural therapy, these interventions must be integrated into the gardening session, indicating that there is already opportunity to weave in talk therapy, internal reflection through journaling, or mindfulness exercises. Often, sessions are pre-planned by the therapist and there is a healing intention (Gascon et al., 2020). With group work, a therapeutic garden is a social environmental intervention, a junction of food production, a sense of community and green spaces, where social involvement and social support can be pillars of therapeutic healing.

One example of a horticultural therapy space is the Nacadia Therapy Garden in Denmark, designed by Ulrika Stigsdotter, for individuals living with PTSD and stress (Khora, n.d). By using elements of therapeutic design, Nacadia creates a sense of containment through clear fenced boundaries around the therapeutic space, including elements like a vine covered pergola that leads patients into the garden (Alaimo et al., 2016; Sidenius et al., 2017). The design elements make the garden's purpose easy to interpret and hosts several activities to support and strengthen healing throughout the therapeutic process. Sidenius et al. (2017) research has determined that the areas patients find the most inviting are ones supporting an in-depth sensory

environment, or spaces that elicit happy memories from childhood. The patients reported the most negative experiences being any time exposure to the outside world interrupted the flow of the garden. This evidence supports how important a sense of containment is in this work and aligns with other studies regarding interruptions from urban noise (Alaimo et al., 2016; Pallsdottir et al., 2014).

Unlike adventure or wilderness therapy, garden therapy accommodates a wide range of physical and mental abilities, making it more inclusive and accessible. Horticultural therapy often serves individuals with mental and physical health challenges, so meeting individual accessibility needs is crucial (Wajchman-Switalska, 2021). This may involve designing large, clearly defined paths, using signage with braille, and incorporating diverse sensory stimuli, such as smooth and rough textures, a rainbow of colors, and audible information. Gardens can be tailored to focus on specific senses; sight, smell, touch, taste, or hearing, enhancing the therapeutic experience.

### ***Ethical Practice: Nature as a Co-Facilitator***

It is essential to recognize that the relationship with nature makes it an integral part of the therapeutic process. When engaging in NBT, the counsellor and client are both in nature and with nature, simultaneously. Nature is not merely a backdrop or static entity; it is a co-facilitator and co-creator in the therapeutic journey (Kaplan, 1973). From an ethical standpoint, this means that nature, like all participants in therapy, is deserving of respect and dignity (Harper & Fernee, 2022). Under the concept of ecological dignity, both plants and people are valued, and this respect and care should be woven into counselling sessions. Therapists aim to cultivate a meaningful relationship between the client and nature, treating nature as an intentional and independent co-facilitator in the healing process. Nature is further described as an entity that communicates with humans through evolutionary co-existence, metaphorical and symbolic

meanings, and its direct impact on human psychology and wellness. Even within the framework of the B.C. Association of Clinical Counsellors Code of Ethics (2023), nature can be recognized as a relationship to be approached with integrity and conscious awareness. Naor and Maysel's (2020) article address a gap in NBT research by recognizing nature as a key co-facilitator. It is suggested that integrating practices such as symbolic interaction, meaning making, mindfulness, and knowledge building, may assist with the inclusion of nature in therapy.

The researchers concluded through their literature review that the role of nature in the therapeutic alliance is unclear. Naor and Maysel (2020) developed two research questions: a) "How do practitioners of NBTs perceive and experience nature's role or input in the therapeutic process?" and b) "What is actually done by the practitioner so that nature's input is integrated as part of NBTs?" This study revealed four main data categories: a) a belief that nature impacts therapy through personal dialogue, reflects aspects of the self, and has symbolic interaction; b) that there is a unique therapeutic relationship between practitioner and nature; c) that practitioners are partners with nature, do not work in nature, and that there must be effort to integrate its presence; and d) that there are five methods of intervention of integration to support nature's significance as a meaningful entity.

Research was conducted with a small sample size, consisting of twenty-six nature-based practitioners varying in age from thirty- four to seventy-five (Naor & Maysel, 2020). These individuals were all described as "practitioners", and were either licensed therapists, wilderness guides or shamanic guides. These practitioners were majorly from euro-centric countries, which may have implicated a biased westernized lens. There were no control groups in this study. Five pillars were identified as intentional methods to integrate and convey to client's the knowledge of nature: trust and safety, building awareness, teaching "new ways of knowing", role modeling, and meaning making. What stood out amongst the results was the significance of role modeling

and meaning making as a margin of ethical practice connected to horticultural therapy. The metaphors and extended parts of talk therapy through horticulture requires imagination and symbolism, and role playing is one method of achieving this. If the practitioner can be comfortable moving outside the box and modeling creativity, this can facilitate client learning to do the same. Meaning making is additionally highlighted in this study as connected to mirroring and highlighting metaphors.

It would be interesting to explore whether these perspectives could contribute to developing a code of ethics for these non-binary therapeutic relationships and to help support insurance coverage. Currently, insurance coverage of NBT in Canada is just beginning, supported by trailblazer British Columbia's Human Nature Counselling Society (<https://humannaturecounselling.ca/>). There is hope that studies such as Naor and Maysel's (2020) will lead to broader coverage and expand opportunities for both clients and practitioners. Additionally, as noted in this article, further exploration of the impact of nature's unpredictability on the therapeutic relationship could be valuable and ways to ensure safety and confidentiality remain paramount in natural settings (Harper et al., 2019).

As a further note on ethical practice, nature-based practitioners working with the land must watch out for cultural appropriation (Segal et al., 2021). As the work being done is land-based, there can be a lot of cross-cultural influences, as well as integration of traditional practices. Gaining a sense of identity, history and land connection is incredibly important, especially as a white settler working on traditional, unceded lands (Jones & Segal, 2018). This can lead to discomfort, an unsettling in this recognition. As white settlers are not often made to be the unsettled ones, this is to be expected. What remains imperative is holding a critical gaze to westernized and colonial ways of practice, and for practitioners to confront their own white settler privilege. Addressing this gap in nature-based practice includes not claiming traditional

practices as one's own, learning to work with nature while honoring traditions, and giving recognition where it is due. In further breakdown of this dominant discourse of land-based work, the unpacking of the narrative of land ownership and food productivity reveals it as white and Eurocentric. This leads to wondering how an unsettling could be accomplished, without completely removing white settlers from traditional lands. Some of the suggested ways of supporting this counter-narrative are prioritizing social justice, supporting Indigenous resistance, sovereignty, land restoration, and promoting intercultural competency and solidarity with First Nations (Eyers, 2023).

### **Narrative Horticulture Current Integration**

Understanding the different approaches to working with PTSD and trauma is central to the design of the proposed therapeutic group discussed in chapter three, as both horticultural therapy and narrative therapy offer unique pathways to healing for those impacted by traumatic experiences. Horticultural therapy provides grounding, calming interactions with nature, while narrative therapy allows individuals to reframe their stories and reclaim agency over their experiences. This final section explores current areas of overlap in the world of narrative horticulture. There are a few individuals making strides in this nuanced field and these topics may resonate as thematic foundations for groups, as they may overlap with the experience of trauma.

### ***Metaphors and Meaning Making***

At first glance, the most apparent overlap is meaning making. Horticultural therapy can provide a healing space to interpret meaning, because it helps with the client's unmet needs of emotional processing (Wästberg et al., 2021). In an active relationship, where there is participation in care for the land and food production, every action can provide meaning and intention. In a more passive approach, the therapeutic goals appear more like tuning into the

emotions elicited from observing nature through finding personal connection, and through exploring metaphors by mirroring their life's meaning in the garden. Healing is a unique journey in that each person has their own path. Finding meaning can allow people to move through their mental health challenges by eliciting a felt sense of belonging, relaxation and purpose.

Wästberg et al. (2021) conducted research regarding a Swedish out-patient psych clinic group gardening therapy program to identify the perceived meaning from their experience. Clients had been faced with trauma, addiction, or chronic pain and all had previous treatment in therapy and medications. The gardening therapy program sessions included time for both group and personal reflection, honoring individual needs, gardening activities and one on one talk sessions with a psychologist. Data was collected using interviews to determine what stood out to the participants as meaningful. What became apparent was that each client experienced their own meaning, creating a unique form of narrative data. The meanings that stood out to participants were the symbolic recognition of valuing life, slow learning, community, being present, relaxation, a space to work through trauma memories, articulating emotions, increasing energy, and relief from stress. Some individuals experienced integration into their daily lives, while others experienced feelings of disappointment, failure, lack of skill integration, and lack of staying in touch with others. These results may allude that facilitating a sense of community was not prioritized, and that skill management may have been overlooked, elements that have been deemed of importance amongst other group studies (Lee et al., 2021; Poulsen et al., 2020).

The results highlighted that there was a change between the before-treatment and the after-treatment interview (Wästberg et al., 2021). In the before interview, all participants regarded a positive outlook, looking forward to the gardening therapy. Afterwards, some participants found the transition to be disappointing, as life post-treatment continued to be challenging. Some found the impacts to be helpful long term, while others wished that the

program itself had been longer than ten weeks. It was assessed that many of the participants found that ten weeks did not leave enough time to develop coping tools, as the emotional healing had taken up most of the program. This margin of time supports the notion of place attachment, where safety must be established over an extended period, noting that ten weeks may not be enough time (Wästberg et al., 2021).

In Rwanda, Beata Mukarusanga (2020) developed a therapeutic gardening project to help children and their parents to reflect on their lives through garden tasks and metaphors. Mukarusanga realized this need for a therapeutic garden when she noticed some of her students' identity was tied to feeling useless and unskilled. The program worked with a group of ten boys, aged twelve to fifteen, encouraging them to co-create metaphors that connected gardening activities with their personal experiences. This approach recognized the cultural significance of farming in Rwanda, particularly the concept of *Kwikarika*, meaning self-resilience through farming. The children explored together their values, skills, and knowledge through creative reflection, and creative group-led metaphors, such as identifying insects as symbols of negative influences like drugs, and pesticides as symbols for protective factors. The project aligned with narrative therapy's aim at client-centered language, moving away from a Western approach and centering culture and creativity (Penwarden & Richardson, 2020). Mothers were included in the process through songs and letter writing, which allowed them to become a metaphorical part of the journey. In bearing witness, the shared reading of letters between parents and children deepened the experience (Carey & Russell, 2003). The process finished with their experience being shared with an audience, deepening this witnessing and deepening connection between parents and children in a way that was meaningful to their lives and culture. This action of witnessing highlights the importance of healing with others, supporting the benefits of a group therapy structure.

### *Food Cycles & Mental Health*

One element of gardening that supports the holistic nature of horticultural therapy is the relationship with food systems, meaning to connect to, and be a part of, the food cycle. In addition to therapy, gardening also facilitates the learning of skills with visible results, which can help connect us to a greater level of self-efficacy, referring to the internal belief of capacity to accomplish (Alaimo et al., 2016). When people can, literally, experience the “fruits of their labour”, capability to reach a desired outcome grows. People can learn to be self-sufficient. When clients are taught the skills to build reliable ways in obtaining their own food, they may experience self-reliance and confidence, with visible results. For some, this may facilitate a perceived food security (Northrop et al., 2013).

One study was conducted in Birmingham Alabama, at the Jones Valley Urban Farms analyzing results of the impact of community gardening on life and food access (Northrop et al., 2013). There was a sample of fourteen individuals, the majority being white, female, and middle aged, for the focus group questionnaire. The takeaways included benefits of having access to fresh, organic, low-cost produce, with a better taste. The participants valued preserving horticulture wisdom, experiencing food systems, and engaging in perceived sustainability and sharing. There was a collective newfound love for fresh, cheaper, homegrown organic produce. What remains imperative to acknowledge in this study, however, is how the demographic of participant’s view of cost savings compares with other socioeconomic backgrounds. It is worth noting that gardening is not necessarily cost effective for those who cannot afford to spare the time to learn the skills necessary (Alaimo et al., 2016). There can be very real barriers, such as finances, zoning, water and land access, making accessibility to these within themselves perpetrators of oppression and social inequity (Reynolds, 2014).

Community gardens are a way to aid in food security, but not a complete solution. Despite the lowering cost of food, the time and labour and start-up costs need to be accounted for. Outreach programs, such as Grown in Detroit, make use of their community garden spaces by teaching gardeners to clean and sell their produce (Alaimo et al., 2016). This example further highlights the need for more community gardening spaces, which can have fewer overhead costs than starting your own garden plot at home, and for programs within communities to provide food. When designing a horticultural therapy program, what happens to the produce is food for thought.

**Eating Disorders.** Narrative therapy has long been recognized for its potential in addressing eating disorders, particularly anorexia, by challenging the dominant societal discourses that equate thinness with worth and attractiveness (López & Muñoz, 2021). As previously mentioned in Ibrahim & Tchanturia's (2017) study, this therapeutic approach encourages individuals to externalize their eating disorder, seeing it as separate from their identity, and to rewrite their personal narratives in a way that empowers them. For example, initiatives like the Anti-Anorexia League proposed by López and Muñoz (2021) in Latin America, inspired by the work of Epston et al. (1997) (as cited in Re-Authoring Teaching, 2024), Archive of resistance: Anti-Anorexia in North America, aiming to provide individuals with tools such as letters, poems, and songs to resist the oppressive narratives surrounding body image and eating disorders. However, while narrative therapy offers powerful tools to deconstruct these harmful cultural "truths," more research is needed across cultures to assess its global applicability (Heywood et al., 2022).

When combined with horticultural therapy, there is a potential for the efficacy of narrative therapy to be amplified. Horticultural therapy not only offers a connection to nature and the food cycle, but also serves as a practical, hands-on approach to healing (Alaimo et al., 2016).

Gardening creates a sense of self-efficacy, where individuals can experience the visible results of their labour by growing their own food. This process allows individuals to develop confidence and self-reliance, which can be particularly important for those with eating disorders, who often struggle with feelings of powerlessness and control over their bodies. The act of nurturing plants mirrors the process of learning to care for oneself, cultivating a new relationship with food in a safe and contained environment.

Horticultural therapy can also act as a form of exposure therapy for individuals with food-related anxieties, helping them confront their fears about food production, cleanliness, and the unpredictability of nature (Smith, 2019). For example, growing and tending to plants involves interaction with soil, insects, and natural processes which might initially trigger discomfort, but over time can encourage a deeper connection to and appreciation for food. This shift in perspective can help individuals build a more positive relationship with food, facilitating an emotional connection to the produce they grow (Patterson, 2024). Value and trust in the food they cultivate may also develop, and clients may come to see food as nourishing and sustaining rather than as a source of anxiety. The combination of narrative and horticultural therapy could potentially provide a powerful approach to break through this negative social stigma, and for the treatment of eating disorders. By using narrative therapy to deconstruct harmful societal narratives around body image and incorporating horticultural therapy to rebuild a healthy relationship with food through practical engagement, individuals can reshape their understanding of both food and self.

### ***Anxiety & Depression***

As stand-alone mental health challenges and as symptoms of trauma, anxiety and depression are areas of mental health worth noting. Horticultural therapy has had significant

benefits for working with these challenges and the techniques implemented have been heavily influenced by narrative therapy. Li et al. (2022) conducted research on 176 college age students in China, to analyze the impacts of horticulture on their mental health. Within nine weeks of instilling the routine of gardening and building place attachment, students showed an increase in emotional wellbeing. The study stated that, “the students in the experimental group concretely express their inner emotions or ideas on plants and works by contacting various plants and the expression of artistic creativity” (Li et al., 2022). This study is possibly displaying a state of externalization, as the students “expressed emotions on plants” and even participated in five-senses interactions, personifying and separating their anxiety or depression from themselves through the act of gardening.

The feeling of safety elicited by place attachment is another recurring theme in mental health research. Joschko et al. (2023) studied depression score changes in young psychosomatic hospital patients after interacting with nature through therapeutic gardens. What was revealed as important was the setting and accessibility of the therapeutic space, the support of the environment, their sense of purpose and doing something meaningful. Specifically, in helping to work with these individuals experiencing depression, having a space that was serene and secluded, a place of refuge and security, significantly decreased depression scores. Most notably, a place to learn to self-regulate and find purpose, left participants feeling safe.

Pallsdottir et al. (2014) found similar results in their study conducted at the Alnarp Rehab Garden in Sweden, examining the role of nature in rehabilitation. The research emphasized the restorative impact of quietness in natural settings and highlighted the need to consider the healing influence of the environment. The study focused on tailoring rehabilitation to individual needs based on the effects of a supportive environment, a technique that is replicated in narrative therapy practice (Beels, 2009). Three main themes emerged: prelude, recuperation, and

empowerment (Pallsdottir et al., 2014). The "prelude" stage involved forming an alliance and place attachment, creating a sense of safety and security necessary for beginning the healing process, which involved more internal work. As participants became more comfortable, they increasingly valued the garden as a peaceful refuge, often preferring spaces where they could be alone. This comfort eventually led to the "empowerment" stage, where self-efficacy grew, allowing participants to take on new challenges, marking the shift to more external work. The study also found that the ability to immediately act on emotions within the garden setting was crucial for recovery, a benefit not often available in traditional healthcare settings. Participants noted that urban noise and traffic interruptions increased stress, further underscoring the importance of a tranquil environment in their rehabilitation process.

Access to outdoor resources and age seem to also play a role in alleviating symptoms of anxiety and depression. Noted by Pouso et al. (2021), this was a significant factor in mental health during the COVID-19 pandemic. An online survey conducted across nine countries explored the impact of blue and green viewable spaces on anxiety and depression. The study found that individual resilience, along with factors like government restrictions on leaving one's home, played a key role in mental well-being. Questionnaires were used to assess anxiety and depression, while sociodemographic data was collected to account for variations in access to outdoor spaces. The highest levels of lockdown were associated with the most strained mental health, but across all participants, both views of and physical access to outdoor spaces were linked to reduced symptoms of anxiety and depression. The ability to see or access nature provided a sense of control that helped individuals better cope with lockdown restrictions.

The study highlighted nature's protective qualities, which became critically important for mental health during the pandemic. However, intersectional factors, such as socioeconomics and personality traits, also played a role in determining the level of benefit from access to nature.

Notably, the study found that young adults showed the highest signs of anxiety and depression. In Sia et al. (2022) *Gardening with Edibles* research reports, higher levels of anxiety and depression were found in the younger group, consistent with findings from the Pouso et al. (2021) study, which suggests that younger individuals generally exhibited lower mental resilience. Participants with more space for gardening, such as those in detached homes, showed higher resilience, potentially due to reduced stress about how and where to start gardening.

### **Summary**

In conclusion of this literature review, this chapter attempted to reflect on the studies and narrative reflections of these therapy models, in hopes of finding theoretical overlap. The takeaways of the research conclude there are advantages of a group-based model for trauma, noting the importance of peer support, resilience-building, and the power of witnessing each other's therapeutic journeys. Facilitating a sense of community and togetherness provides more significant integration into daily life and the development of concrete new narratives. The theoretical framework of postmodernism shaped the lens through which these studies were analyzed, highlighting elements of collaboration and subjective reality. Moving through the literature revealed potential areas of future exploration and study limitations, which will be expanded upon in chapter three.

### Chapter 3

#### Discussion

It is of hope that this research empowers readers to confidently integrate gardening into their clinical practice, showing that alternative therapeutic approaches are both viable and effective. Proper assessments, specialized training, and ethical standards all help to ensure safety, while gardening's community-building and nervous system regulation effects support client healing (CHTA, 2024; Grahn et al., 2021). The low-barrier nature of horticultural therapy, combined with the various spaces for programs, such as hospitals, private gardens, parks, creates flexibility for clients (Haller, 2021). Sensory immersion is especially beneficial for those uncomfortable with traditional talk therapy, and who may be struggling with cognitive fatigue (Kaplan, 1995; Wajchman-Switalska, 2021). The rich meaning making, and metaphors found in gardening appear to seamlessly blend with narrative therapy and could even stretch further to other therapeutic modalities (Mukarusanga, 2020). Practitioners should be aware that long term effects for trauma and PTSD are still under researched and that this is a current limitation of therapeutic application. (Derrien et al.,2020).

Horticultural therapy can be seen as an ethical and insurable practice for clinical counsellors by treating nature as an active co-facilitator in therapy, respecting both nature and clients under the concept of ecological dignity (Harper & Fernee, 2022). This involves the development of a reciprocal relationship between clients and nature, much like any therapeutic participant. Ethical standards, such as those outlined by the B.C. Association of Clinical Counsellors (2023), can guide these interactions. For insurability, brief, structured forms of therapy with measurable outcomes, as seen in combination narrative modalities, can help support insurance claims and align with ethical practices (Edgar et al., 2022). Establishing standardized

data collection could further ensure accountability and promote broader insurance coverage (Niwa et al., 2022). However, it remains imperative to stick to the values of narrative postmodernism within data collection, and make use of creative interventions highlighting client language, such as letter writing and poetry (Müller, 2024; Penwarden & Richardson, 2020).

Through this research, it seems that narrative therapy could be considered a flexible talk therapy modality that integrates well with horticultural therapy practices. Both approaches emphasize co-facilitation, whether through co-creating personal stories in narrative therapy or non-binary collaboration with nature in horticultural therapy (Morgan, 2000; Naor & Mayseless, 2020). There is immense ethical overlap between the modalities, honoring client needs and language. There is ample opportunity for creative output, as they can both include art forms, such as poetry and creative garden design (Müller, 2024; Penwarden & Richardson, 2020).

Community gardening encourages shared storytelling and witnessing of skill development, a promotion of the bearing witness technique that supports connection, empowerment, and healing (Carey & Russell, 2003). Research from Wästberg et al. (2021) and Mukarusanga (2020) shows how gardening therapy allows individuals to reflect on trauma and life experiences, cultivating resilience and cultural connection through metaphors. The garden can serve as a metaphorical space for clients to externalize problems and cultivate new narratives, paralleling their personal growth. These methods appear to be more successful trauma treatments than horticulture alone, however longer duration and more attention to the development of coping skills was noted as important for future studies (Wästberg et al., 2021).

It is still up for debate whether this integration could be an effective intervention for working with trauma and PTSD. This paper does not explore all available research, however through the examples reviewed, the answer to this question is mixed. Although diverting from

true narrative ethics, SNT and NET have both been shown to be effective treatment options (Cloitre & Schmidt, 2015; Edgar et al., 2022). Horticultural therapy has been shown to improve cognitive function and reduce stress, however its efficacy as a long-lasting treatment for more complex trauma is unclear (Derrien et al., 2020). It is possible that through further research studies, a successful intervention for trauma work could develop over time. This would require examining different quantifiable narrative programs, comparing exposure therapy to STAIR, and monitoring their alignment with horticulture. To stick to ethical principles, additional studies would need to be conducted using more individualistic characteristics, and with data collection that honours client creativity and language, such as photographs of garden design, meal preparation, poetry, flower collages, and so on. Further research would need to explore the efficacy of creativity for working with trauma.

Group therapy has offered a meaningful framework for trauma survivors, providing validation, community, and connection. Trauma, often isolating, can hinder one's ability to relate to others; group settings counter this by fostering shared experiences and witnessing others' healing journeys. Creative interventions such as art, movement, and narrative techniques like the Tree of Life offer expressive outlets when words fall short, helping participants process emotions and gain agency. Incorporating somatic approaches, such as containment exercises, builds internal safety and presence, enhancing the therapeutic impact. Together, these elements emphasize the importance of gradual, supported exploration and shared healing in group formats.

Regarding horticulture and group work, most of the examined studies looked at community-based gardening interventions and how they influenced feelings of resilience, interpersonal relationship development, and sense of community and togetherness. Community gardens provide green spaces to areas where there is little access in urban environments (Alaimo

et al., 2016). The results varied throughout the reviewed studies, some finding that when community building intentions were set and knowledge was shared, there was an increase in emotional well-being (Lee et al., 2021; Northrop et al., 2013). Other studies noted that the benefits of gardening did not outweigh the benefits of socializing, however this was concluded during the unprecedented time of COVID-19 (Koay & Dillon, 2020; Sia et al., 2022). Many limitation factors are needed to be taken into consideration for efficacy, including access to green spaces, program design, age, housing, and previous gardening experience. Overall, there are positive factors in sharing community space that narrative therapy could overlap with, if these limitations are considered. The design of a narrative garden therapy program would take place at a set location, hopefully providing access to people regardless of age and types of housing. The program would be developed considering sensory stimulation, place attachment, and elemental design, attempting to hit the markers of current successful programs.

### **Limitations and Future Directions**

Although this paper does not address all research available, it does take into consideration a wide variety of studies, narrative reflections, and psychoeducation. As some of the research questions lead to inconclusive answers, there are a few limitations of the reviewed research to review. First, there is a lack of understanding regarding horticultural therapies' long-term impacts, with few studies directly observing outcomes over extended periods. While horticultural therapy has a history of mental health benefits, it is no longer a common treatment for veterans with PTSD, highlighting a need for updated approaches (Davis, 1998; Derrien et al., 2020). Topics for further exploration include understanding how place attachment can enhance therapeutic outcomes, integrating trauma-informed care into horticultural therapy, and investigating how such therapies impact those with chronic PTSD.

Horticultural therapy programs can show promise for reducing stress and fostering community; however, they have mixed results in addressing deep-seated trauma, particularly in displaced populations (Poulsen et al., 2020). The western therapeutic approach of direct dialogue may be less effective in certain cultural contexts. This may be an area that could improve with narrative integration of client language and cultural relevance. A limitation of the western lens is the Eurocentric framing of land-based therapy. Traditional land practices and Indigenous perspectives are often overlooked or misappropriated, suggesting a need for greater cultural competence and decolonization efforts in therapeutic practices (Jones & Segal, 2018). Prioritizing social justice, supporting Indigenous land sovereignty, and promoting intercultural solidarity are overtly important for developing ethically sound approaches and should be highlighted in future research (Eyers, 2023). This future research would need to be viewed through the ethical guidelines proposed by Naor and Mayseless (2020), as noted with the gap in NBT research not typically recognizing nature as a key co-facilitator, alluding to the fact that there needs to be a shift in how therapy is conducted in nature. It would be of interest to review older research studies to compare modern day approaches to NBT and review how this value has changed over time. This would help to develop the most trauma-informed and collaborative programs, aligning with all ethical codes and narrative principles.

If I were to continue my research, I would explore deeper into the concept of flow learning, as it is particularly useful for modern day attention spans, where many of us spend time watching short videos on cell phones (Cornell, 1989). Research in this area could bring forth understanding of how horticultural therapy may provide healing in this paced, ever-changing world. It would be worth learning more about nervous system regulation through nature's

rhythms, attunement, and place attachment, to truly understand how horticultural therapy could work as a modern-day trauma intervention.

### **Reflections**

Through this research, I have come to a better understanding regarding the complexities of combining multiple therapies. Despite there being clear benefits, developing an evidence-based treatment for an individualistic therapy is quite challenging. There is not, currently, a huge amount of research to pull from and develop new theories. However, from these findings, there is a lot of promise in horticultural therapy as a clinical counselling scope of practice. I still believe that narrative therapy has the greatest amount of overlap and would add depth to the therapeutic process. In the future, I look forward to the real development of my narrative therapy gardening program. This research, as well as my Master of Counselling program, has helped to set me up for success and to determine what it takes to make it happen. I will continue to support organizations involved in nature-based therapies as they push towards insurance. I hope to witness the development of new horticultural therapy programs, and to see more studies regarding trauma treatments come into fruition.

### **Application**

To address the gaps in the research, I propose the development of the narrative garden therapy group. This group would be created as a trial and study design, to assess the efficacy for trauma work in an integrative narrative gardening practice. The program would run bi-monthly from April to October, with sixteen group sessions. The addition of three individual sessions will be included in this program, totalling nineteen sessions altogether. This timeframe aligns with both the evidence based narrative interventions and the Vancouver growing season, allowing participants to engage with the seasonal change, from seed to harvest, and opportunity to develop

place attachment (Alaimo et al., 2016; Cloitre & Schmidt, 2015; Edgar et al., 2022;). The program could take place in a rented farm space or private garden that is easily accessible to individuals in Vancouver, while being far enough from city noise, to help omit urban noise interruption (Alaimo et al., 2016; Pallsdottir et al., 2014). The sessions will focus on building community and shared purpose, complemented by additional one-on-one therapy sessions that occur at the beginning, middle, and end of the program. By utilizing this extended period and one on one therapy alongside group therapy, I hope to bridge the gap in limitations of horticultural therapy, where length of time, reflection, and coping skill integration have been negatively reported (Wästberg et al., 2021). Eight participants, aged 19 and over, may include those struggling with trauma, and trauma-informed care will be integral to the approach. Group agreements will be utilized to prioritize safety and confidentiality, working to develop a supportive atmosphere for all participants (see Appendix for sample group agreements).

Each group session will last two hours, facilitated by two clinical counsellors. Counsellors are recommended to have specialized training in horticultural therapy, narrative therapy, and trauma-informed care, ideally with a feminist lens, as research indicates that lack of training can lead to poorer outcomes (Edgar et al., 2022). This program will attempt to facilitate a sense of community through bearing witness to each participant's progress. The group will also encourage communication, care, and skill development, with nature facilitating the entire process, incorporating narrative methodologies of co-creation (Goldenberg et al., 2016). Group discussions will revolve around the development of metaphors, learning how to use the elements of the garden and plant cycles to find connections in one's personal life narrative. Slow exposure to different skills, tools, and techniques integration will allow clients to gradually engage with their experiences while building support systems with other group members.

Plant care between sessions will be essential, and decisions will need to be made about whether clients will return to the garden or if staff or volunteers will assist. Additionally, the program will attempt to address food security by including the community and optional produce donation, allowing for a broader societal impact and discourse around these vital issues.

Clients will be encouraged to reflect on their external work by keeping a journal or forming a creative way to document their process. As clients form metaphors and experience new meaning, a unique form of narrative data can be formed. A typical session will include a containment exercise, introduction of a gardening skill and option for participation or observation, therapeutic questioning to help guide metaphor development, reflection time with a preferred spot in the garden, and group share. The facilitators will assess a client's relationship with nature during the first one-on-one session and honour a client's wishes to participate either passively or actively and adjust sessions accordingly. Remaining sensitive to each client's comfort levels around sharing and setting boundaries is imperative in a group setting. Value will be placed on the concept of slow learning or skills, creating attachment, and the unpacking of one's discourse through the general process of narrative therapy. Through externalization, clients can put their problems into the plants they grow, personifying and moving outside of themselves. Group share will provide ample opportunity for bearing witness of other's newfound stories of capability, care, and understanding.

### ***Narrative Gardening Group Therapy Session Examples***

The appendix was created to present a flexible framework for a narrative gardening therapy group, developing a balance between structure and interpretability for facilitators. By including only a few sample sessions, the open-ended design allows program creators to adapt

and pivot in-session according to participant needs. This helps to maintain the integrity of each participant's voice, with creative forms of data collection preserving their unique perspectives.

A typical session begins with a containment exercise, focusing on sensory immersion and group safety (see Appendix for sample containment exercises). The format prioritizes client-led exploration and time for reflection of each participant's unique journey. The session then uses garden and nature metaphors for personal reflection, such as seeds representing potential or fertilizer symbolizing support systems. Participants are then encouraged to look inwards on their personal experiences through guiding questions that align with active or passive gardening activities, slowly working towards re-authoring their narratives (see Appendix for sample activities). Through sharing circles, community is encouraged.

### **Conclusion**

To conclude this capstone, narrative techniques within a horticultural setting offer a unique and transformative approach to trauma recovery. Horticultural therapy provides clients with therapeutic processing while simultaneously supporting the development of new skills. Horticultural therapy offers a unique pathway to healing that promotes capability, and challenges clients both physically and mentally. Through the narrative therapeutic process, clients get to experience the externalization of deeply engrained problems, separating themselves and finding new ways of being. Combined, these approaches build a narrative of capability, resilience, and connection, offering trauma survivors meaningful pathways to healing and growth.

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## Appendix

### **Narrative Garden Therapy Group:** Sample sessions (first four of nineteen).

#### Group Design:

- 16 group sessions, 2-hour long sessions, bi-monthly, running April- October, with 2 co-facilitators
- 3 individual sessions, 1-hour long, beginning, middle, end of program
- Eight participants who may have experience trauma in their lives
- No previous gardening experience required
- Group takes place at a rented farm space with a green house, one-on-one sessions take place online
- Confidentiality, data collection forms, and safety forms to be sent and signed before first online session
- Participants will be provided with gloves, seeds, shovels, and other general gardening supplies. Participants will be asked to dress appropriately for the weather, including hats and boots.
- Participants are encouraged to bring journals or creative outlet of choice for documenting their progress

#### ***Individual Session 1-*** Pre-group therapy session

- Counsellor to establish the participants current comfort level with nature, gardening experience, and group therapy experience
- Counsellor to assess the current relationship with nature and their desire for passive or active involvement
- Counsellor to conduct safety and risk assessment

- Goals for the participant during group therapy

### ***Group Session 1-*** Introduction and Group Formation

- 1 hour: Opening containment exercise using sensory immersion, welcoming into the garden space. Establishing group agreements, such as disability needs, meanings of safety, and confidentiality. Followed by introductions and questions, introduction to horticultural materials.
- 1 hour activity: Tour of the garden space, discuss expectations and create a shared vision for the group.
- Narrative intervention: Reflection exercise with creative outlet of choice of what has brought them here. Identifying initial personal challenges or stories participants wish to explore. Participants are welcome to share if they wish.
- Example guiding questions for reflection:
  - What do I want to grow in my garden?
  - What is the potential of my garden?
  - What do I want to learn?

### ***Group Session 2-***

- 1 hour: Containment exercise using different sized seeds sensory experience, introduction to what is inside a seed and the start of plant life. Example guiding questions:
  - What do these seeds represent in my life?
  - What does it mean to plant these seeds?
  - What does the soil represent?
- 1 hr. Active activity: Seed symbolism. Starting seed trays, participants pick their plants of choice. When planting, participants set intention or goals for treatment. Reflect on the

guiding questions through outlet of choice after activity. Return to group for reflection and group share.

- Passive activity: Find a sit spot by yourself in the garden and sit with a plant that stands out to them. Using similar guiding questions, participants reflect through outlet of choice:
  - What does this plant need to grow?
  - What challenges does it look like this plant has faced?
  - What is special about this plant?
  - What similarities are there between me and this plant?

Return to group for reflection and group share.

### ***Group Session 3***

- 1 hour: Containment exercise, what is each participant has noticed about the garden so far. What has this reminded them of in their own life? Introduction to fertilizer, compost, and what plants need to survive. Comparing caring for the garden to self-care. Guiding questions for metaphors:
  - What does the fertilizer represent in my life?
  - Why is this important?
  - What do I need to survive?
- Active activity: Tending to seedlings, preparing garden beds. Discuss narratives that arise from different seedling progress. Return to group for reflection and group share.
- Passive activity: Following up with previous week's plant. Reflect on what has changed, what the plant might need or is missing. Return to group for reflection and group share.