



# Effect of Horticultural Therapy: A Comprehensive Review

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## ABSTRACT

Horticultural therapy has gained prominence as a holistic approach to promoting well-being and improving the quality of life for various populations. This review paper deals into the multifaceted benefits of horticultural therapy, encompassing stress reduction, mood enhancement, a sense of achievement, social interaction, cognitive stimulation, a connection to nature, distraction from negative thoughts, and physical well-being. By examining the mechanisms through which horticultural therapy exerts its impact, this paper sheds light on the therapeutic potential of engaging with plants and nature. Furthermore, the review discusses the specificity of outcomes across different populations, highlighting how horticultural therapy can be tailored to address the diverse needs of individuals across age groups and contexts. Through a comprehensive exploration of existing literature, this review paper underscores the significance of horticultural therapy as a promising avenue for enhancing mental, emotional, and physical health, ultimately fostering a deeper understanding of its applications in various therapeutic settings, including some measures to overcome dementia.

**Keywords:** Horticultural therapy; Stress reduction; Mood enhancement; Social interaction; Cognitive stimulation; Nature connection; Well-being; Population specificity

## INTRODUCTION

Horticultural Therapy (HT), often called gardening therapy, is a therapeutic approach that entails getting people involved in gardening and other plant-related activities to enhance their emotional, mental, and physical health [1]. Many different demographics, including those with disabilities, mental health difficulties, or those undergoing rehabilitation, benefit from its frequent usage as a supplemental therapy. Horticulture therapy is a special technique that links people with plants. The emerging medical practice of horticultural therapy is beneficial to people's physical, emotional, and social well-being [2]. The practice of gardening and interaction with plants can improve mood, cognitive function, stress levels, and general quality of life. Horticultural therapy is the participation of a client in horticulture activities facilitated by a trained therapist to achieve specific and documented treatment goals. HT involves the use of plant materials to achieve measurable treatment goals with special populations [3]. People with mental illnesses have received rehabilitation through the use of horticultural therapy. Horticultural therapy makes use of a horticultural therapist's

knowledge and skill to create a treatment plan that incorporates horticultural activities with the intention of achieving particular goals, which leads to psychological, physiological, and cognitive changes that improve health-related quality of life and biological changes that prevent chronic diseases. To meet the needs of safety and stability from cognitive overburden status in accordance with the trauma recovery idea, horticultural therapy offers a sense of control, empowerment, and cooperation. Through the use of the gustatory and olfactory senses, horticultural therapy helps to stimulate memories and cognitive abilities [4]. Effects of horticulture treatment in a medium-secure facility With regard to the potential health advantages of regular engagement in green exercise, a significant body of literature has accumulated recently. HT is beneficial at boosting mental health and participation in worthwhile activities, but it hasn't been shown to significantly alter patients' emotional states or foster more social interaction among those who are mentally ill. Immersion in horticultural activity may therefore be a useful therapeutic strategy for enhancing the health advantages of service users. In addition to improving personal development in

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terms of gardening knowledge, employability skills, personal accomplishments, and positive behavior changes towards themselves and others, horticultural service users reported numerous personal health benefits as a result of their participation in horticultural activities [5]. HT has effectively found its practical implication for treatment of dementia.

Horticulture may provide emotional advantages such as lowering stress levels, relieving psychiatric symptoms, stabilizing mood, and boosting feelings of peace, joy, and spirituality. It might assist individuals in reducing fatigue and regaining focus and cognitive function. Many people's daily lives have been impacted by depression, an issue that is affecting the entire world, particularly older folks. Numerous studies have shown the therapeutic benefits of horticultural therapy, which is frequently used as an alternative to medication for individuals with depression [6].

## LITERATURE REVIEW

### Benefits of horticultural therapy

Horticultural therapy has shown significant positive impacts on mental health for various reasons:

**Stress reduction:** Engaging in gardening activities helps reduce cortisol levels, which are associated with stress. The act of nurturing plants and being in a natural environment promotes relaxation and lowers anxiety [7].

**Mood enhancement:** Horticulture therapy has been linked to improved mood and reduced symptoms of depression. The sensory experience of being around plants, the satisfaction of watching them grow, and the exposure to sunlight contribute to the release of endorphins, the "feel-good" hormones [8].

**Sense of achievement:** Watching plants flourish due to one's care fosters a sense of accomplishment and self-worth [9]. This can be particularly valuable for individuals struggling with self-esteem issues.

**Social interaction:** Group horticulture therapy sessions offer opportunities for social interaction, reducing feelings of isolation and loneliness, which are often linked to mental health challenges [10].

**Cognitive stimulation:** Planning, organizing, and tending to plants engage cognitive functions. This can be beneficial for individuals dealing with cognitive impairments or conditions like dementia.

**Connection to nature:** Nature exposure has been associated with improved mental health. Horticultural therapy provides a chance to connect with the natural world, which in turn can lead to reduced symptoms of anxiety and depression [11].

**Distraction from negative thoughts:** Gardening can be an absorbing activity that takes one's focus away from negative thought patterns. It provides a positive and constructive way to manage and redirect thoughts.

**Physical benefits:** Engaging in gardening involves physical activity, which releases endorphins and contributes to improved

overall well-being. The exposure to sunlight also stimulates the production of vitamin D, which is linked to better mental health [12].

### Mechanism of impact

Numerous places employ horticulture as a kind of direct or indirect healing. Additionally, there are variations in the scope at which horticulture is applied as therapy. On a green care farm, there are clients who work in the fields with crops in addition to the "green rooms" for the elderly [13].

People with mental conditions commonly experience psychological impairments such a decline in their capacity to cope with stress and their sense of self. Horticultural therapy is beneficial at lowering participants' levels of stress, despair, and anxiety. Through its connection to nature, mindfulness, physical exercise, sense of accomplishment, social interaction, basophilic impact, stress reduction, sensory stimulation, and distraction, and environmental control, horticultural therapy lowers anxiety and tensions [14].

### Population specific effect of HT

HT can have population specific effects on various groups of people:

**Elderly people:** Elderly people may benefit from horticultural therapy by improving their social, emotional, and physical well-being. HT has been shown to be useful in reducing waist circumference, weight, and promoting physical flexibility in older persons. Additionally, it may be beneficial for lowering stress, treating depression and loneliness, and boosting social contact and fruit and vegetable consumption. HT may be a useful tool for enhancing the social, emotional, and physical well-being of older persons.

**Children:** Through gardening activities, horticulture therapy helps kids by enhancing their sensory awareness, motor skills, and overall wellbeing. Children's physical and mental health improved when they were active in horticultural activities and in natural school environments. Children should be encouraged to take part in school horticultural activities, and natural aspects should be included into the campus design.

**Middle age:** As per the social and medical observations taken on middle aged group of people it was found that depression and anxiety experience were reduced after horticultural therapy followed by a better self-actualization.

### Challenges and limitations

The therapy process is a long and highly specific process which may take a large gap for an individual to get cured. The overall process of therapy requires a specialized therapist having a high experience in this field. Additionally, its effectiveness might vary depending on individual preference and conditions [15].

It's important to be aware of the potential challenges and limitations associated with it. One challenge involves tailoring activities to accommodate participants with diverse physical abilities, ensuring that everyone can fully engage. Weather

conditions can also impact the feasibility of outdoor sessions, requiring flexibility in scheduling [16].

Maintaining a suitable garden space and providing necessary resources can be demanding, both in terms of time and costs. It's worth noting that horticulture therapy may not be suitable for individuals with allergies or those facing mobility limitations, as the outdoor environment could pose challenges for them.

Furthermore, effective horticulture therapy goes beyond gardening skills. Therapists must be well-trained to address the emotional and psychological needs of participants, requiring a comprehensive understanding of how the natural world can positively impact mental well-being [17].

### Future direction

We need to investigate the effects of various horticulture therapy interventions on a particular demographic in order to guide the development of HT in the proper path. The horticultural therapy program offer clients with knowledge that will allow them to transfer skills from hope way to home. Therapeutic goals include stress reduction, increased mindfulness, improved self-care and social skills, as well as instilling a sense of hope for the future. Future study should emphasize improvements in organizing the horticultural activities, more adapted to these clients. The advantages of HT as an integrated treatment for clients with mental health problems as schizophrenia, dementia, and depression are not straightforward. Some of the following points can also be considered while studying the future direction:

**Effectiveness of different horticultural activities:** Investigate the impact of various gardening and plant-related activities on participants' mental, emotional, and physical well-being. Compare activities like planting, harvesting, pruning, and propagation to understand which ones yield the most therapeutic benefits [18].

**Plant selection and therapy:** Explore how different types of plants, such as flowering, aromatic, and edible plants, affect participants' engagement and emotional responses. Determine whether specific plants have unique therapeutic qualities [19].

**Environmental factors:** Study the influence of environmental factors like sunlight exposure, temperature, humidity, and garden design on the effectiveness of horticultural therapy. This could involve experimenting with different garden layouts and environments to optimize therapeutic outcomes [20].

**Participant profiles:** Examine how individual characteristics, such as age, cultural background, and prior gardening experience, impact the effectiveness of horticultural therapy. Tailoring therapy approaches to different participant profiles could improve outcomes.

**Long-term effects:** Conduct longitudinal studies to assess the lasting impact of horticultural therapy on participants' mental health, cognitive function, and overall quality of life. Follow participants over an extended period to understand the sustainability of therapeutic benefits.

### Materials and procedure

We conducted a literature analysis of recent research publications and studies pertaining on horticultural therapy to compile the data for this report. Using terms like "horticultural therapy", "horticulture and peace of mind", "horticulture and human psychology" and others, we searched several databases, including Google Scholar, Science Direct and Pub Med. To find recurring themes and patterns relating to effect of horticultural therapy, we examined the articles and studies.

### RESULTS AND DISCUSSION

Numerous studies have indicated that horticultural therapy contributes to reduced stress, anxiety, and depression levels among participants. Engaging in gardening activities has been linked to increased levels of serotonin and dopamine, often leading to improved mood and overall mental well-being. Horticultural therapy promotes physical activity and exercise, which can enhance cardiovascular health, muscle strength, and flexibility. Participants commonly experience lower blood pressure and better management of chronic pain conditions. Engaging with nature through horticultural therapy can have positive effects on cognitive functions such as attention, memory, and problem-solving skills. The sensory stimulation from interacting with plants and the environment contributes to cognitive engagement. Group gardening activities foster social interaction and a sense of community. Participants often share experiences, knowledge, and tasks, leading to increased social connections and reduced feelings of isolation. Horticultural therapy has been integrated into various therapeutic programs, showing promising results for populations with specific needs, such as individuals with autism spectrum disorders, dementia, and post-traumatic stress disorder. The multisensory nature of gardening can be particularly beneficial in these cases.

Horticultural therapy offers a holistic approach to well-being by addressing physical, mental, emotional, and social aspects. The combination of outdoor activity, plant care, and sensory engagement provides a comprehensive therapeutic experience. The act of gardening and tending to plants has a calming effect on the nervous system. This stress reduction is attributed to the release of endorphins and the opportunity for mindfulness while engaging in repetitive tasks. Beyond immediate therapeutic outcomes, horticultural therapy encourages sustainable practices and environmental consciousness. Participants gain a deeper understanding of ecosystems, plant life cycles, and the importance of responsible land use. Horticultural therapy can be tailored to various settings, making it accessible for diverse populations. It can be implemented in hospitals, rehabilitation centers, schools, and community gardens, making it a versatile option for different needs. While existing studies demonstrate the positive effects of horticultural therapy, more research is needed to explore its long-term impacts, optimal program structures, and the mechanisms behind its therapeutic benefits.

## CONCLUSION

In conclusion, horticultural therapy holds significant potential as a complementary therapeutic approach for improving mental, physical, and emotional well-being. Its ability to engage participants in meaningful outdoor activities, foster social connections, and provide a sense of accomplishment contributes to its growing recognition in the field of holistic health. Further research and continued integration into various therapeutic settings can help unlock its full range of benefits.

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