

# INCREASING THE QUALITY OF LIFE IN THE ELDERLY THROUGH HORTICULTURE THERAPY

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**Abstract:** *Horticultural therapy can be implemented in an economically, socially and environmentally sustainable way of achieving these goals. Studies on the use of green spaces in mental health care have shown a positive result, with a cumulative association between access and quality of life through the use of green spaces and lower scores on psychological measures of stress (Pope et al, 2015: 33), the major determinants being accessibility green space, with enough green spaces in the neighborhood and theirs for relaxation and recreation. Similarly, van den Berg et al. (2016: 187) showed a positive association in spending time in green spaces and better scores on mental health and vitality scales. Nutsford et al (2013: 49) suggested that green spaces are beneficial for mental health, especially in the case of anxiety and mood disorders, both through the participation of people in activities in green spaces that can be used near the home and in terms of the proportion of usable spaces. green in a neighborhood. Similarly, positive effects on general health were found by Dadvand et al (2016: 112). It is particularly relevant for an inpatient population is a study that identified the benefits of bringing horticultural therapy into patients' spaces in a dementia population (Maller, C. et al, 2005: 64).*

**Keywords:** *horticultural therapy; quality of life; the third Age; the elderly; mental illness*

## 1. Introduction

Horticultural therapy refers to the use of a series of techniques and activities related to plant care to promote the general physical, mental and spiritual health of an individual, group or community. Horticultural therapy was conceived by combining several concepts from different fields such as occupational therapy, landscape architecture, gerontology, rehabilitation, etc. One of its basic principles is that participation in the life cycle of a plant, from the seed stage to the maturity stage is healing. This healing effect is achieved through natural aesthetics, which through its intense green encourages spending time outside the home, as well as by providing a space for a series of activities such as exploration, walking, rest, observation, plant care, etc.

Gardens have been considered healing spaces since ancient times. The gardens were highly prized by the Egyptians. The houses had flower and vegetable gardens and were surrounded by walls that provided privacy. Green - Wadj, was considered a sacred color. Color was predominantly associated with the Nile, the Mediterranean Sea (called Wadj-Wer), land and vegetation. The ancient Egyptians used the phrase "doing green things" to talk about beneficial things. Green was a powerful symbol of rebirth. For this reason, the images of the dead were painted green to guarantee their rebirth in the afterlife. Wadj also meant "to flourish" or "to be healthy." Green malachite was a symbol of joy. "Malachite field" was the expression of the Egyptians for the land of the blessed in the afterlife. Jannah is the Arabic name for the Islamic concept of life after death and means "Garden" in translation. Words such as Jannat al-'adn - The Gardens

of Eternal Peace, Jannat al-Khuld - The Gardens of the Eternal, Jannat al-Na'im - The Gardens of Pleasure appear in the text of the Qur'an.

Roman gardens were places of solitude, a refuge from urban life. The famous people of the Roman Empire were very interested in agriculture, horticulture and botany. Seeds and plants were often objects of exchange.

Over time, however, the healing role of nature has been replaced by more technical means, such as medical imaging, surgery and drug therapies, thus taking place a separation between physical ailments and spiritual discomfort. Gardens have become a purely decorative accessory or simply a financial investment to increase the price of a property.

Garden spaces offer opportunities for gradual participation in a number of ecological activities (Lovibond, PF et al 1995: 68). A great benefit of these is social inclusion, identified by Caan (2004: 123) as a way to provide a common identity. Psychologically speaking the benefits of houseplants in an office worker population have been critically analyzed by Bringslimark et al (2009: 239), with recognition of the impact on outcomes in terms of psychophysiological stress.

Horticultural therapy can relieve various forms of dementia. Although the innate attraction of people to nature has not been scientifically proven, the natural environment certainly creates a sense of gratitude, peace and inner peace. Gardening, a relaxing and therapeutic activity in itself, has multiple benefits for people with dementia. Dementia is an incurable disease with a special impact on the health of the individual, on his family and on his acquaintances. Alzheimer's disease is one of the most common forms of dementia and is generally diagnosed after the age of 70. Dementia is manifested by a general decline, especially in memory, communication, organization of daily activities and mental processes. In addition to this mental decline, there are a number of symptoms such as depression and aggression.

People with dementia often suffer from episodes of anxiety and discomfort. In these cases, traditional medicine focuses on prescribing antipsychotics and sedatives. It is also discouraging that antipsychotic drugs prescribed to Alzheimer's patients to treat mental illness associated with the disease increase the risk of premature death, according to a study by British researchers at King's College London, quoted by Reuters. In the last twenty years, however, a new current has emerged in the medical field: doctors are encouraged to intervene actively, preferably by ensuring the psychological comfort of patients, and not by resorting in the first instance to pharmacological methods. Gardening offers such a non-drug approach, as horticultural therapy can be used to improve the quality of life of the elderly population. The benefits of horticultural therapy have been demonstrated in multiple preliminary studies. They reported improved attention, regularization of agitation, reduction of chronic pain and the need for antipsychotics in patients who participated in horticultural activities.

During the interviews, patients showed higher spontaneity, an increased interest in communication and activities, which led to the normalization of family relationships. Other studies have shown that horticultural therapy programs have also led to improved sleep quality and declining verbal agitation in nursing home residents. The interest in alternative treatments to drug treatments is growing in recent years. In this context, horticultural therapy offers a combination of medical treatment and artistic approach that benefits modern society in an ecological way.

Therefore, the following design principles of a therapeutic garden for people with dementia will be considered:

1. Sustainability
2. Accessibility
3. Facilitating socialization
4. Inclusion of activities to stimulate memory and cognitive function
5. Sensory stimulation
6. Safety

List of recommended horticultural activities in the treatment of people with dementia:

- Artistic activities with natural or vegetal materials (painting, drawing, viewing art objects, making objects from seeds, flowers, branches, cones, etc.)
- Collection of vegetal materials and decoration with them
- Feeding the birds and supplying the birdhouses with water and food
- Planting bulbs, sowing or planting seedlings
- Watering, weeding, cutting dry bushes
- Use of gardening tools
- Lawn mowing

Horticultural therapy in the treatment of clinical depression. Depression is a psychological disorder that is manifested by low interest in regular activities, feelings of guilt and lack of self-esteem, sleep and appetite disorders, lack of energy and concentration. Even in its mild forms, depression substantially affects the quality of life of those affected. Traditional treatment for depression frequently includes antidepressants, such as selective serotonin reuptake inhibitors (SSRIs) and tricyclic antidepressants. Other therapeutic methods are Eye Movement Desensitization and Reprocessing (EMDR), psychotherapy, alternative therapies and acupuncture. The effect of horticultural therapy in the treatment of clinical depression was demonstrated by a study conducted in 2010 in Norway. The data needed for the study were collected before, during and after a 12-week horticulture program on 4 farms near Oslo. The aim of the study was to assess changes in the severity of depression, attention span and compulsive thinking. Results showed a significant decrease in depression in 50% of participants ("Beck Depression Inventory"), the score of the Beck Depression Inventory being at the same low level and three months post-study.

Garden activities for the treatment of clinical depression:

- Planting
- Transplantation
- Crop construction, pot planting
- Bird and butterfly watching
- Walking, contemplation
- Picking flowers
- Interaction with herbs to stimulate the senses
- Interaction with plants for texture and color (sensory input)

Horticultural therapy in the treatment of post-traumatic stress disorder. Horticultural therapy, as a method of psychological intervention to treat post-traumatic stress syndrome, has been developed in the United States and is a relatively recent treatment alternative. Post-traumatic stress disorder occurs in those people who have witnessed, or have been the victims of, shocking, violent and dangerous

events such as: domestic violence scenes, terrorist attacks, physical or sexual violence, violent accidents, natural disasters. Symptoms can occur even years away from the traumatic event. Some symptoms fade in a few months, but sometimes they become chronic. The person suffering from PTSD avoids places and objects related to the traumatic experience. Victims have strong feelings of guilt, depression, worry. Apathy and memory loss occur. Patients feel pressure all the time, ready to react and have outbursts of anger.

Not all traumatized people end up suffering from PTSD and not all people suffering from PTSD have witnessed violent events. SPT can also occur when a loved one is in danger or when they die unexpectedly or violently. The risk of PTSD increases greatly when the traumatic event is associated with other situations such as lack of social support, loss of job or home, etc. Neuroimaging studies performed on patients with PTSD have shown that several regions of the brain differ structurally and functionally from those of unaffected individuals.

The amygdala, hippocampus and prefrontal ventromedial cortex play a major role in triggering SPT symptoms. The amygdala is the integral center for emotions, emotional behavior (especially fear and anxiety) and motivation. In animal studies, amygdala stimulation results in defensive and aggressive behavior. In people with PTSD, the amygdala is hyper-stimulated. Any sound, image or smell that suggests a resemblance to the traumatic event can trigger panic and fear reactions. A clear indication for SPT is the frequent startle and traumatic memories that reappear instantly. Dysfunction of the prefrontal ventromedial cortex seems to play an essential role in the pathogenesis of emotional diseases. At the same time, the prefrontal ventromedial cortex also has the role of regulating the decision-making process, any damage to this organ resulting in personality changes, impulsive and unthinking decisions. The size of the prefrontal ventromedial cortex is smaller in patients with PTSD.

The hippocampus is mainly associated with memory. The size of the hippocampus in victims of PTSD is substantially reduced, and they respond with an extremely high level of stress when they are subjected to situations similar to those at the origin of the trauma. Therefore, victims of PTSD perceive and respond differently to stress compared to people who do not have this syndrome. SPT changes the chemical balance of the brain, but the good news is that this psychological dysfunction is reversible. The human brain has a remarkable plasticity and regenerative capacity.

What are your current treatment options? Drug treatment for patients exposed to traumatic events comes with important side effects such as sexual dysfunction, insomnia, risk of suicidal behavior, low blood pressure and obesity. Horticultural therapy is an alternative therapy to psychotropic drugs, whose positive effect has been demonstrated by several studies. In the article "Psychological changes caused by the intervention through horticultural therapy on elderly women in areas affected by the earthquake"; "The psychological changes of horticultural therapy intervention for elderly women of earthquake-related areas", the researcher Yuka Kotozaki describes the study conducted on 39 elderly women, residents in the area most affected by the Great Japanese Earthquake. The participants were placed in two groups, one of 20 people (intervention group) and another of 19 people (control group). The intervention group was included in an 8-week horticultural program, and the control

group in an anti-stress therapy program. After the two months, a number of indicators were evaluated:

1. Clinician-Administered PTSD Scale (CAPS)
2. Geriatric Depression Scale (GDS)
3. Posttraumatic Growth Inventory (PTGI-J)
4. WHO Quality of Life Score 26 (WHO-QOL26)

In the intervention group, the indicators improved significantly, along with the level of salivary cortisol. The results were maintained post-study, suggesting that horticultural therapy has a long-term effect on people with PTSD. How contact with plants affects the human mind and brain is still unclear. From studies, researchers now know for sure that horticulture reduces stress, calms nervousness and lowers the level of cortisol, the hormone that plays the main role in the response to stress.

## **2. Case study: Horticultural therapy within the Neuropsychiatric Recovery and Rehabilitation Center Gâșteni, Bacău County**

Gâșteni Neuropsychiatric Recovery and Rehabilitation Center, Bacău County is one of the main mental health centers in the region of Moldova. Among other clinical services, it hosts people with an acute deterioration in their mental health. Within the location, a team of specialists in acute mental health disorders for adults was developed, having available resources available for horticultural therapy, a project for the general psychiatry departments for acute inpatient adults. Here we describe the methods used for horticultural therapy, the results and the challenges.

The current research was designed between September 2020 - May 2021 with purpose to examine the performance and perceptions of horticultural therapy in this facility.

Therapists work to improve the patient's professional performance and develop these skills. One of the basic themes of this model is that people are professional beings and must "do", in the sense that we need to participate in tasks that provide a sense of self-worth. This model analyzes behavior in three key areas: willpower, habit, and performance. The aim is to carry out meaningful and productive activities that can enable patients to develop their horticultural skills and do so within the triple bottom line in terms of economic, social and environmental sustainability.

### **2.1. Research strategy:**

I chose the sociological survey as a method of scientific research. This research technique is quite ambiguous and should be treated with special caution. – it's neither an observation nor an experiment, but it is also an observation (we notice and record some observational facts) and somehow an experiment (we provoke reactions, deliberately, according to a previous recipe).

Survey is a method used to study the behavior of media consumption (reading the medical records, watching the activities, listening to doctors, nurses and beneficiaries). From the two research tools of the sociological survey, the questionnaire and the observation, we chose participatory observation. Namely, I noticed from the inside the activities of interest and I analyzed the activities carried out by the hospital.

Another research method used is: the interview. The interview is one of the most frequently used research methods, applied both in the social sciences, socio-human sciences, and in the development of various professional activities.

In their well-known Treatise on Social Psychology, Roger Daval and collaborators (1967: p. 121) make due distinctions between the interview situation and the psychosociological phenomena mentioned. The interview involves the meeting, but is not to be confused with it. People meet even without the purpose of obtaining information from each other, but simply to see each other, for the pleasure of being together. Even if they talk to each other, it doesn't necessarily mean they exchange information.

Obviously, the interview can be a purpose of the meeting, but the meeting between two or more people often has completely different purposes. There is no interview without a conversation, but not every conversation is an interview. Conversation involves the exchange of information about one topic or another. People who converse frequently change their roles as sender and receiver. The information is not directed in one direction, there is no leader of the discussion, as is the case with the interview. The interview is more than a dialogue - says Roger Daval - because the dialogue is not always aimed at obtaining information. In films, for example, dialogue allows the expression of moods; in philosophy through dialogue it allows the expression of moods; In philosophy, dialogue expresses the ideas, thinking, conception of authors. Socratic dialogues are true philosophical reflections, not the search for information. Neither Socrates nor Plato "interviewed", but set out their philosophical conceptions in their dialogues.

Finally, the interview cannot be confused with the interrogation, although in both cases there is a person who asks questions, who directs the discussion. Obtaining information through interrogation evokes the obligation to answer, the external constraint. On the contrary, the interview presupposes the freedom of expression of the personality, even the joy of people to have their say, to make their opinions public.

The use of the interview as a research technique in the socio-human sciences leads, therefore, to the establishment of the relations between the variables and to the verification, testing of the hypotheses. It differs from ordinary verbal communication by the simple fact that the information is directed by the interviewer. Used in the interview-interview, as well as the sociological questionnaire, being research techniques of the survey method and opinion poll (hence the name "interview survey") - is the method of investigation with the highest frequency of application. In this case, we used the interview method to determine how beneficial horticultural therapy is in the Center from Gâșteni.

## **2.2. Results of the study:**

As a proxy measure of how well the project is received is that it is based on the average number of participants per week. Participation is voluntary.

Recent feedback polls revealed that 83% of respondents rated the group as "useful", "mostly useful" or "extremely useful". Additional benefits informally reported to the therapy team included a reduction in anxiety and restlessness and a sense of general well-being.

Some comments made by patients during the interview about the project are quoted below:

- Leaving the ward and focusing on other activities.
- Perfect practice for when you go home.
- I'm thinking about work and I'm looking forward to getting out of here.
- Helping with the garden and being productive.
- Beautiful flowers, beautiful garden, beautiful day, beautiful people.

The project contributes to a better experience among the people admitted to the center's sections at a certain difficult period in their lives. It has other associated earnings. He strives to be self-sufficient. This includes lower procurement of essential resources, reduced travel times and reduced carbon footprint. The harvested product provides ingredient for cooking sessions, which in turn provides an opportunity to teach basic cooking skills and for the center's kitchen, self-management.

Various challenges were encountered among professionals, who overestimated skills or misinterpreted the set of skills needed to participate, lack of appropriate clothing and footwear and reduced patient motivation, sometimes leading to low participation.

Another limitation is the level of psychiatric disorders in the hospitalized population, sometimes incompatible with participation in horticultural therapy due to factors such as low concentration, reduced executive function, inability to sustain activity for extended periods, reduced strength or endurance, risk of aggression, and, sometimes, intentionally or unintentionally, the unintentional destruction of the business environment.

The project initially started as an attempt by a small group of occupational therapy, which aimed to get out of the ward. Given that horticultural therapy is only one part of the treatment offered in a multitude of intensive interventions available to a hospitalized patient, it becomes difficult to measure the particularity of the impact of this specific intervention. Finally, time and time constraints can also affect the ability to perform the required tasks.

### **3. Case study conclusions:**

Leck et al (2015: p. 231) analyzed the impact on "care farms" and found that welfare measures were positively influenced by participation in them, with farm-mediated health benefits, the environment and social interactions becoming increasingly important. the more important the participants spent more time participating in the care farm.

There is additional evidence to suggest that several therapeutic goals, such as levels of interaction and self-esteem, can be achieved through gardening activities (Rappe et al., 2008: p. 85). They can play a positive role in the long-term management of mental health, with "green" interventions increasingly recognized in promoting well-being and increasing the quality of life (Webber et al., 2015: p. 325).

Different ways for horticulture:

- plant in your room
- gardening (individually or in groups)
- on-site garden
- voluntary community gardening
- paid gardening.

Horticultural groups have a positive impact on the care provided and contribute to the achievement of good professional and educational results. Patients

can work hard and get a more stable approach. Patients report this and the project helps and supports wider hospitalization as a community and describes the pride and sense of accomplishment when returning from these groups. Significant and intentional goals are beneficial to all involved, although doing things just for their pleasure is often an underestimated gain. Social interaction takes place in all ways - with colleagues or members of the public. This therapy helps to combat social isolation and increase social inclusion, contributing to the recovery of the individual and increasing the quality of life of the elderly.

### References:

1. Cooper, M. C. and Barnes M., (1995). Gardens in Healthcare Facilities: Uses, Therapeutic Benefits and Design Recommendations. *The Center for Health Design*, Inc, CA.
2. Dadvand, P., Gascon, M. et al. (2016). Green Spaces and General Health: Roles of Mental Health Status, Social Support, and Physical Activity. *Environment International*, Volume 86, 2016: 60-67
3. Klara Greffin, Silke Schmidt, Neeltje van den Berg, Wolfgang Hoffmann, Oliver Ritter, Michael Oeff, Georg Schomerus and Holger Muehlan, (2021). *Health Qual Life Outcomes*.
4. Lovibond, P.F. and Lovibond, S.H. (1995). *The structure of negative emotional states: comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories*. *Behaviour Research and Therapy*, [//www.ncbi.nlm.nih.gov/pubmed/7726811](https://www.ncbi.nlm.nih.gov/pubmed/7726811)>.[Iunie 2021]
5. Maller, C., Townsend, M. and Pryor, A. (2005). Healthy nature healthy people: 'contact with nature as an upstream health promotion intervention for populations. *Oxford Journals, Health Promotion International*, 21(1): 45-54
6. McCaffrey, R., Liehr, P., Gregersen, T. and Nishioka, R. (2011). Garden walking and art therapy for depression in older adults. *Research in Gerontological Nursing*. 4(4).
7. Nutsford, D., Pearson, A. L. and Kingham, S. (2013). An ecological study investigating the association between access to urban green space and mental health, in *Public health*. *Elsevier*, 127(11).
8. Popescu, A. (1993). *Terapie ocupațională și ergoterapia*, Bucharest: Cerna.