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Horticultural therapy in the landscape architecture: People-plant interactions

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ABSTRACT

The positive influence of horticultural therapy on the psychophysical status of human health has been noticed and already appreciated in the USA, Europe and the Pacific region, such as Japan, Taiwan, Australia or Korea. As part of horticultural therapy, a patient with a specific physical or mental problem gets to perform specifically selected tasks that are designed to help him cope with dysfunction and improve health condition. Horticultural therapy is usually an element of exercise therapy, sensory therapy or physical rehabilitation. This article describes the most important aspects of horticultural therapy.

***Keywords*:** therapeutic gardens, healing, horticulture, gardening

1. INTRODUCTION

Gardening activities have long been known to be therapeutic healing activities which can positively impact mental health and human happiness [Relf 2006]. These activities are termed as horticultural therapy. Horticultural therapy is a field of psychology and physiotherapy [Górska-Kłęk et al. 2009] and it was already known in olden times [Ferrini 2003, Capra et al. 2019]. Since then it has been practiced with recognition and its effectiveness is still proven [Coventry and White 2018]. The first modern documentation of horticulture being used as a

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treatment for mental health purposes was in the 1800s. Dr. Benjamin Rush, the "father of American psychiatry" discovered that field labor in a farm setting helped attain positive outcomes for clients with mental illness [Hefly 1973]. His classic work, *Observations and Inquiries upon the Diseases of the Mind* was the first psychiatric book printed in the United States. He proved that psychotherapy is not limited to the use of medicaments [Haller and Kennedy 2019]. If the idea of therapy is to get to know each other anew, then communing with nature and learning about it can greatly facilitate this process and further accelerate it [Etkin 2017]. According to the American Horticultural Therapy Association (AHTA), in the years 1940 and 1950, the rehabilitative care of hospitalized war veterans significantly expanded the adoption of this practice. It ceased to be limited only to the treatment of mental illness, it gained credibility, and it was adopted in a much wider scope of diagnostics and therapeutic options. It is commonly used in a wide range in rehabilitation; it also brings benefits at the professional and social level [Aldous 2000]. Nowadays, horticultural therapy is established as a helpful and effective beneficial modality. The positive influence of horticultural therapy on the psychophysical status of human health appreciated in the USA [Predny and Relf 2000, Jarrott et al. 2002], Europe [Poulsen et al. 2016] and the Pacific region, such as Japan [Toyoda 2012], Taiwan [Yao and Chen 2017], Australia [Aldous 2000] or Korea [Kwack and Relf 2002, Park 2012, Park et al. 2015].

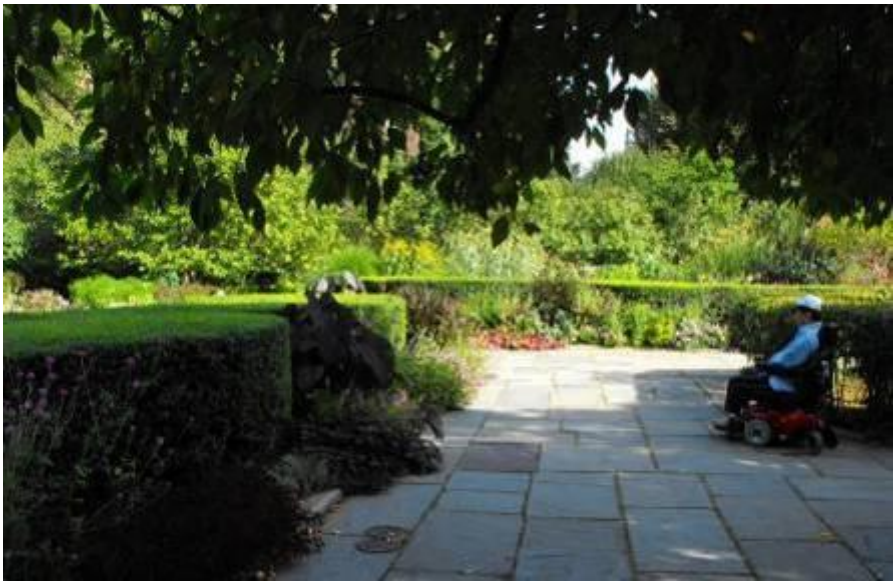

Figure 1. Contact with plants can have many health benefits for people with disabilities, and can provide a source of inspiration and recreation (The Conservatory Garden in Central Park, New York City, photo by P. Salachna).

2. HORTICULTURAL THERAPY AS A TREATMENT METHOD

Horticultural therapists are professionals with specific education, they are trained and have extensive experience in the application of this type of treatment and rehabilitation [Christie et al. 2016, Guo and Xu 2018].

The American Association of Landscape Architects (AHTA) supports a functioning network of professional consultants who specialize in the field of designing therapeutic gardens. Some universities have academic programs in horticulture therapy that are certified through The American Association of Landscape Architects. This organization requires that to be Horticultural Therapist Registered, 480 hours of field practice are to be finished under supervision of a professionally registered horticultural therapist.

Horticultural therapy techniques are used to help workshop participants learn new skills or to gradually recover those that have been lost in some way [Ashman 2016]. This type of therapy improves memory, cognitive abilities, language skills, influences the development of the ability to initiate tasks and the socialization of participants [Brown 2019]. In physical rehabilitation, horticultural therapy helps to strengthen muscles and improves fitness, balance and endurance [Rhie et al. 2017].

As regards professional abilities, people learn through horticultural therapy to work independently and solve problems, and then follow the chosen path [Chan et al. 2017, Świderska 2017, Chang et al. 2018].

3. TERAPEUTIC GARDENS

According to the American Horticultural Therapy Association (AHTA), the following fundamentals represent practices for therapeutic gardens: scheduled and programmed activitie, features modified to improve accessibility, well defined perimeter, a profusion of plants and people/plant interaction, the garden promotes four seasons of sensory stimulation, benign and supportive condition, universal design and recognizable placemaking.

The definition of horticultural therapy says that gardening activities used in therapy are actual hortitherapy when they consists of four elements: client subjected to treatment with a specific diagnosis, qualified therapist, specific therapeutic procedure utilizing garden classes and designated measurable clinical goal of therapy [Lee et al. 2004, Li and Zhang 2009, Khan et al. 2016].

It is necessary to adjust the space to all possible diseases due to the fact that the users of therapeutic gardens are people of different health status and age [Kim et al. 2002, Khan et al. 2016, Harris 2017, Hassan et al. 2018]. Very often, these are people with limitations caused by their age or illness, or limited sensory abilities (sight, hearing). Therefore, it is important for the garden to be characterized by accessibility, functionality, safety and easy access to plants to contact them [Baker 2009, Kim 2003, Kavanagh 1995, Momtaz 2017, Jiang et al. 2018].

Performing gardening works should be possible without restrictions, the ease of cultivating the plants is the basis in this kind of greenery assumptions [Horowitz 2012]. When designing areas for therapeutic gardens, it is important to pay special attention to the paths, their layout should be clear and legible. Clear arrangement of paths and their crossing at right angles are important, because users moving on wheelchairs and blind people would have difficulty in crossing through sharp corners and winding roads. In order to include people with disturbed spatial cognition, it is recommended to build paths in the form of loops, routes can not end blindly. Regarding the surface, it must be durable and smooth so that one can move freely on it in a wheelchair, but it cannot be slippery during rainfall and become iced [Simson and Straus 1997, Świderska 2017].

Figure 2. Children have an natural, genetically predisposed tendency to discover the natural world known as biophilia or love of nature (photo by A. Zawadzińska).

Figure 3. Urban deprived populations, disadvantaged social groups, those over the age of 65, and disabled people are all less likely to visit green spaces. The solution to the problem may be the involvement of these people in volunteering (The Royal Botanic Garden Sydney, photo by P. Salachna).

Figure 4. The Ruth Rea Howell Family Garden offer special programs for families are scheduled year-round (The New York Botanical Garden, New York City, photo by P. Salachna).

Figure 5. The Children's Garden is an interactive educational environment in which children of all ages, backgrounds, physical abilities and cultures can play, explore and discover the natural world (The Royal Botanic Garden Sydney, photo: P. Salachna).

4. TERAPEUTIC PLANTS

Assortment of ornamental plants planted in therapeutic gardens is extremely significant [Arslan et al. 2018, Han 2018]. They must be species that require frequent care treatments (**Figures 6-9**). Plant selection for gardens that will be looked after by patients undergoing

treatment should include species and varieties that are easy to grow and rarely attacked by pests and diseases. However, safety should be the most important thing during plant selection. This means that they cannot have spikes, thorns, poisonous juice, they cannot cause burns or allergies [Świderska 2017, Zhao et al. 2019].

Figure 6. Plants for beneficial insects (A – *Centaurea macrocephala*; B – *Geranium macrorrhizum;* C – *Liatris spicata;* D - *Solidago canadensis* (foto by A. Zawadzińska)

Figure 7. Scienting plants (A – *Calendula officinalis;* B – *Dianthus caryophyllus* C – *Reseda odorata;* D - *Matthiola longipetala* (foto by A. Zawadzińska)

Figure 8. Plants with hairy leaves and flowers (A – *Pulsatilla vulgaris*; B – *Leontopodium nivale* subsp. *alpinum*; C – *Stachys byzantina;* D - *Cerastium tomentosum* (photo by A. Zawadzińska)

Figure 9. Proposition of plants with rough leaves (A - *Heliotropium peruvianum;* B - *Heliopsis helianthoides;* C - *Rodgersia aesculifolia*; D - *Borago officinalis* (photo by A. Zawadzińska)

5. CONCLUSION

Summarizing, a therapeutic garden is a plant-dominated environment, deliberately designed to facilitate the interaction of nature elements with healing abilities. Interactions can be passive or active, depending on the design of the garden and the needs of users [Cipriani et al. 2018]. Therapeutic garden is the focused use of ornamental plants to encourage person mental, touching, physical, and intellectual well-being [Świderska 2017].

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