



REVIEW ON: HORTICULTURAL THERAPY FOR HUMAN HEALTH

Ousman Yimer*

Ethiopian Institute of Agricultural Research, Holetta Agricultural Research Center, PO Box 31, Holetta, Ethiopia.

Corresponding Author: Ousman Yimer

Ethiopian Institute of Agricultural Research, Holetta Agricultural Research Center, PO Box 31, Holetta, Ethiopia.

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ABSTRACT

Horticultural therapy (HT) is a process, in which plants are used to improve the body, mind and soul, through horticultural activities and to increase the awareness of the natural world. The purpose of this paper is to summarize /review the empirical research results on horticultural therapy for human health being done by different authors. From the results horticulture has been widely adopted for various groups of patients: people with physical and cognitive impairments, seniors, cancer patients, physical therapy clients, alcohol recovery clients, spinal cord and brain injury patients, people with neurological impairments, alzheimer's and dementia groups, children, etc. Virtually, it is applicable to all patient groups. More over the results have demonstrated that horticulture could promote physical and psychological well-being and could be used in psychotherapy and rehabilitation for persons with different needs.

KEYWORDS: Horticultural therapy, Therapeutic horticulture, Patients health.

1. INTRODUCTION

Horticultural therapy (HT) is a process, in which plants are used to improve the body, mind and soul, through horticultural activities and to increase the awareness of the natural world. Horticultural therapy is universal, adaptable and validated by research (Adevi & Liberg, 2012). Horticultural therapy is defined as a process through which plants, gardening activities, and the innate closeness we all feel toward nature are used as vehicles in professionally conducted programs of therapy and rehabilitation. Horticultural therapy became well-known in Asian countries such as Japan, Korea, Taiwan, and China recently. Those Asian countries are faced with aged or aging societies (Toyoda, 2003).

According to Sempik *et al.* (2003) clarify the concepts of therapeutic horticulture and horticultural therapy separately. They suggested that horticultural therapy is the use of plants by a trained professional as a medium through which certain clinically defined goals may be met. Horticultural therapy has a pre-defined clinical goal whereas therapeutic horticulture is directed towards improving the well-being of individuals more generally. Therapeutic horticulture is the process by which individuals may develop well-being by using plants and horticulture. This is achieved by active or passive involvement.

The effect of landscape on the health is increasingly recognized as important in research and at the policy

level. The effect of landscape directly involves the horticultural therapy (Aslam *et al.*, 2016). The objective of this paper focuses on/and summarizes the previous research studies related to horticultural therapy, which is emerging issue for solving therapeutic situation/condition for human being.

2. LITERATURE REVIEWS

2.1. History of Horticultural Therapy

The first recorded data of the incidence of 'horticultural therapy' was around 1600 after Christ. This happened when poor people who weren't able to pay their hospital bills so they were made to work in the gardens to pay it off. Due to their working able to pay their hospital bills so they were made to work in the gardens to pay it off and in garden it was noticed that the patients who were working in the garden as well as those who had a view of the gardens recovered quicker than other patients who had no contact with the gardens (Ananth, 2008).

The first recorded use of horticulture in a treatment context occurred in ancient Egypt, when court physicians prescribed walks in palace gardens for royalty who were mentally disturbed. In the 1800s, horticulture as therapy was conducted to people with mental disabilities, disadvantaged young people and mentally handicapped children in the US. During and after World War II, horticulture was adopted extensively in hospitals. Occupational therapists actively used plants and gardening activities in their therapy and rehabilitation

programming (Lewis, 1967). In 1951, a horticultural program started in hospital's geriatric ward. Horticulture became a kind of therapy in hospitals conducted by medical staff such as occupational therapists in the US. HT became well-known in Asian countries such as Japan, Korea, Taiwan, and China recently. Those Asian countries are faced with aged or aging societies, which may be one of the reasons for attracting attention to HT in these countries (Toyoda, 2003).

Horticultural Therapy is adopted successfully for various groups of patients: people with physical and cognitive impairments, seniors, cancer patients, physical therapy clients, alcohol recovery clients, spinal cord and brain injury patients, people with neurological impairments, Alzheimer's and dementia groups, children, etc. Virtually, it is applicable to all patient groups (Toyoda, 2003). Therapeutic applications of various green exercise activities and other nature based approaches such as therapeutic horticulture are effective at promoting health and well-being and by enabling healthier communities (Hine *et al.*, 2011). Green care may have great potential to reduce the cost of public health.

According to Sempik *et al.* (2003) gardening and horticulture have been used as a therapy for different groups of people in various settings to promote health, well-being and social inclusion. Horticulture is used in occupational therapy as a component of rehabilitation or specifically as horticultural therapy.

2.2. Horticultural therapy Vs. Human health

Therapeutic horticulture is a process that uses plants and plant-related activities through which participants strive to improve their well-being through active or passive involvement. In a therapeutic horticulture program, goals are not clinically defined and documented but the leader will have training in the use of horticulture as a medium for human well-being. This type of program may be found in a wide variety of healthcare, rehabilitative, and residential settings (American Horticultural Therapy Association, 2012).

According to (Mackenzie, 2000) many effects of horticultural therapy are known empirically although most of them have not been verified yet. The visible landscape is believed to affect on human beings in many ways, including aesthetic appreciation and health and wellbeing. It improves the quality of life through psychological and physical changes. The main positive effects of landscape on health are short term recovery from stress or mental fatigue, faster physical recovery from illness and long term overall improvement on patient health and well-being.

Patients having view of trees or natural environment through window with their regular treatment reduces the dose of medicine and they recover more quickly as compared to patients who have view of wall (Taylor and

Kuo, 2009).. It significantly reduces the pain, improves the comfort pleasure and well-being and lower stress level. Psychological development involves an improvement in self esteem and self confidence. Working with living plants allows patients to feel a sense of responsibility (Wichrowski *et al.*, 2005).

A study showed that restorative activities such as walking in a garden help women recover from breast cancer and patients with Alzheimer's disease in facilities with landscaped areas for walking exhibited fewer violent outbursts than did patients in facilities with only hardscapes. Such Alzheimer's disease has reported positive results from properly designed outdoor environments. This shows positive responses to horticulture activities from seniors with Alzheimers disease in an adult day services program (Relf & Lohr, 2003).

The study by (Kotozaki, 2014) was conducting a preliminary experiment prior to more extensive experiment for women in the coastal area of the disaster area and he examined the psychological change pre and post intervention. As a result, the HI group showed significantly increased post-intervention community consciousness score and self-esteem score. The result showed indicate that the effectiveness of horticultural therapy as a method of improving the local community consciousness by our intervention.

The research result focus on interaction between the elderly and plants, in both active and passive ways, benefits the health of the elderly in long-term care. Providing the elderly with access to plants would probably promote positive health outcomes. However, more multidisciplinary empirical research is needed to clarify the ways in which a green environment is associated with health of the elderly. Evidence from objectively measured health outcomes would facilitate establishing gardens in institutional settings (Rappe, 2005).

The research study investigated the effects of indoor horticulture activities on the current psychological wellbeing of older people in two long term care facilities over a 7-week period. After the 7-week program, the horticulture group had a significant Increase in psychological well-being, whereas the control group had a slight decrease in psychological wellbeing. The results of this study indicate that horticulture activities may have a beneficial effect on the current psychological well-being of older people in a long-term care facility (Barnicle & Midden, 2003). The results showed that the experimental group showed significant decrease in anxiety, depression, and stress when compared with the control group (Kam and Siu, 2010).

The study by Siu *et al* (2020) supported the proposal HT is effective in increasing mental well-being, engagement, and the sense of meaningfulness and accomplishment of

participants. Many participants reported a reduction in stress and anxiety in the focus group, but positive changes in affect were not fully observed during the group process or captured by quantitative measures.

According to socio demographic and clinical variables, the interesting trend was recorded on the subscale of anxiety showing that the male participants in the study group were more anxious, with the most pronounced inflection noted on this scale after treatment. The results of the study have shown that recuperation from stress, depression and anxiety was possible and much more complete when participants were involved in horticulture therapy as a nature-based solution for improving mental health (Vujcic *et al.*, 2010).

The application of horticultural therapy as a means of improving well-being for people living with dementia within the community. The widespread introduction of horticultural therapy in community dementia care would complement both government policy and charitable agendas, by providing an opportunity to enhance the well-being of people with dementia through engagement with the outdoors and involvement with their community. Evidence concerning the general benefits of horticultural therapy, and its applications in dementia care, suggests that horticultural therapy may offer a practical and effective solution to alleviating social isolation and improving well-being for community-dwelling people with dementia (Noone *et al.*, 2014).

The use of green environments may affect stress levels. A strong inverse relationship was established between the frequency of visiting urban open green spaces and the frequency of experiences of stress (Grahn *et al.*, 2010). There is evidence that the degree of experienced stress influences environmental preferences. Van den Berg *et al.* (2003) reported that among stressed or fatigued people the association between preference and an environment's potential for restoration was especially pronounced. High levels of stress were associated with higher preferences for natural environments and lower preferences for built environments. Korpela (2003) found that adults with severe negative mood were more likely to choose natural sites as favourite places rather than other places.

The study by Barnicle & Midden (2003) compared the effectiveness of a horticulture program between a control and horticulture group. Having a comparison of a horticulture program against a control group and another therapy (e.g., art therapy, music therapy, pet therapy) would help researchers further understand the effectiveness of using horticulture as a therapeutic tool, compared to these more established therapies compared to these more established therapies.

In one study patients with chronic musculoskeletal pain who participated in a 4-week horticultural therapy program experienced an increase in mental and physical

health, as well as an improved ability to cope with chronic pain (Wolf *et al.*, 2014). After just one horticultural therapy session, patients recovering from cardiac surgery experienced marked improvement in their mood, and stress reduction. Beyond treating acute health conditions, research shows that horticultural therapy can also benefit individuals trying to overcome emotional or physical trauma (Wolf *et al.*, 2014). The other study adults with diagnosed depression participated in a therapeutic horticulture program and showed significant beneficial change in mental health aspects of anxiety, mood, and depression.

The natural vegetation and hospital landscape play a vital role in health and wellbeing of patients through various physical, psychological and social benefits. As well, evidence from studies of a number of respondents strongly suggests that gardens and other natural element help to improve patient's satisfaction with the performance of healthcare provider and overall quality of care (Aslam *et al.*, 2016).

3. CONCLUSION

The general studies by different researchers showed the relationship between humans and plants is helpful to keep all people healthy. Green space apart from protected the environments where we live, are crucial for medicals of horticultural therapy. Horticultural therapy is an emerging field of clinical practice based on proven benefits to the physical, mental and emotional wellbeing that accrues from gardening as a healing or therapeutic process. The studies strength that horticulture could promote physical and psychological well-being and could be used in psychotherapy and rehabilitation for persons with different needs. The needs for horticultural therapy are increasing little by little in many fields: medical care fields, welfare facilities and educational institutions, hence: everyone should have to focus on this field.

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