

Effects of Horticultural Therapy on Hope and Wellbeing of Hospitalized Patients

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ABSTRACT

Horticultural therapy is gaining attention as a form of rehabilitations in medical fields especially in the areas of occupational therapy and nursing care. This paper uses a psychological point of view to assess whether or not horticultural therapy is effective for improvement of hope and well-being concepts of patients in Panchakarma ward at Ayurveda Teaching Hospital Colombo. Twenty four patients were invited to participate in eight horticultural therapy sessions for a month in addition to their routine medication and physical therapy. Wellbeing was evaluated using a modified questionnaire, developed by Ryff. Hope was evaluated using a questionnaire, the Dispositional Hope Scale (DHS), developed by Snyder. The data were collected before and after the experiment. A Wilcoxon sign rank test was used to analyze the data. The results revealed that there is a significant difference (P value < 0.05) in the hope and physiological well-being of patients. Irrespective of the gender hope showed a significant difference after the treatment. All six parameters evaluated under wellbeing autonomy, environmental mastery personal growth positive relations, purpose in life and self-acceptance of males showed a significant difference after the treatment while in females except for positive relation, other parameters showed a significant difference. Hence horticulture therapy activities could be used to improve the hope and wellbeing of the hospitalized patients.

KEYWORDS: Hope, Horticultural therapy, Hospitalized patients, Wellbeing

INTRODUCTION

Horticultural therapy (HT) is a remedial process in which plants and gardening activities are used to improve the body, mind, and spirits of people (American Horticultural Therapy Association, 2016). Horticultural therapy includes interventions mediated by nature-oriented views and spaces such as gardens and everything associated with them, plants and materials related to them and garden occupations performed for healing, restoring, improving health and well-being, rehabilitation, or simply for general benefit (Soderback *et al.*, 2004). The benefits of involvement in horticultural activities and exposure to nature can be seen in cognitive, psychological, social and physical realms and research continues to reveal these connections across many groups of people. Horticultural therapy affected emotional, cognitive and sensory motor functional improvement and increased social participation, health, well-being and satisfaction with life (Soderback *et al.*, 2004).

Gardening helped people with serious health problems to cope with their situation when comparing groups of people with and without cancer (Unruh, 2004). Ulrich (1984) reported the positive influence of nature on patients in the hospital. Surgical patients assigned to rooms with windows looking out on a natural scene had shorter postoperative hospital stays, received fewer negative

evaluative comments in nurses' notes, and took fewer potent analgesics than patients in similar rooms with windows facing a brick wall. Regardless of the view, windows in hospital rooms also allow for the potential benefits of natural sunlight. Spinal surgery patients exposed to bright, naturally-sunlit hospital rooms experienced significantly less stress, and used less pain-killing medication compared to similar patients who were not exposed to intense sunlight (Walch *et al.*, 2005). A study of brain activity, using alpha rhythms as a measure, showed that participants were most awake and relaxed while looking at plants with flowers, rather than empty pots (Nakamura *et al.*, 1990). After just one horticultural therapy (HT) session, patients recovering from cardiac surgery experienced marked improvement in their mood, and stress reduction (Wichrowski *et al.*, 2005). In one 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 (Gonzalez *et al.*, 2011). A more recent study suggests views of natural surroundings may benefit male and female patients differently. Men with obstructed views of nature demonstrated a decline in mental health, while women with obstructed views appeared to have a greater decline in physical health (Raanaas *et al.*, 2012).

Peer counseling and individual counseling increased self-esteem, reduced anxiety and depression, and increased life satisfaction. Horticultural therapy in group counseling, can create an informal therapeutic atmosphere for the client, and can assist the client in enhancing psychosocial functioning (Ramsay *et al.*, 2007). The quality of life encompasses the concept of well-being and hope. Wellbeing is defined as how satisfied an individual is with his or her own life (Kim and Kim, 2000). Hope is defined as the perceived capability to derive pathways to desired goals, and motivate oneself *via* agency thinking to use those pathways (Snyder, 2002). People who have a strong sense of wellbeing and hope are able to cope with stress and engage in relationships, and they typically have the motivation necessary to reach their goals (Snyder *et al.*, 1997). The seven week indoor horticultural therapy program resulted in a significant increase in psychological well-being among older residents in a long-term facility compared with a control group that instead showed a slight decrease in their psychological well-being (Barnicle and Midden, 2003).

Currently HT is used by the general public, as well as in residential facilities for people with mental illness, elderly patients with dementia, delinquent adolescents, and prisoners in other countries (Kim *et al.*, 2008). However, HT research has not been done in Sri Lanka. Hence the aim of this study was to identify the effects of indoor HT activities on hope and wellbeing, of hospitalized patients.

MATERIALS AND METHODS

Location

The study was conducted from November to May 2015-2016 at *Panchakarma* ward in Ayurveda Teaching Hospital, Colombo 8.

Procedure

In this experiment well-being and hope were evaluated in 24 patients. Initially 29 patients were taken to the experiment, but five patients were dropped out due to the discharge from hospital.

Wellbeing was measured using a modified self-reported questionnaire, developed by Ryff (Ryff, 1989). Hope was measured using a modified self-reported questionnaire, the Dispositional Hope Scale, developed by Snyder (Snyder *et al.*, 2002).

The independent variable is eight sessions of HT, with sessions lasting 90 minutes at a frequency of twice a week. The dependent variable consists of wellbeing and hope. The contents of the sessions are shown in Table 1. In wellbeing questionnaire respondents' rate

statements on a scale of 1 to 6, with 1 indicating strong disagreement and 6 indicating strong agreement. The hope scale was consisted of 12 measures. A six point Likert scale ranging from definitely false to definitely true questions were used to evaluate the results.

Data Analysis

Data were analyzed using Minitab Statistical Package (Minitab 2015). Means were compared based on Standard error 95% confidence interval. A Wilcoxon sign rank test was done to compare the responses given by the patients before and after the experiment. The data were analyzed for all respondents and for male and female patients separately.

RESULTS AND DISCUSSION

Wellbeing

Ryff's scales of psychological wellbeing were designed to measure six theoretically motivated constructs of psychological wellbeing, which include autonomy (independence and self-determination), environmental mastery (the ability to manage one's life), personal growth (being open to new experiences), positive relations with others (having satisfying, high quality relationships), purpose in life (believing that one's life is meaningful) and self-acceptance (a positive attitude towards oneself and one's past life).

Females and males showed significant P value for autonomy. Because the treatment had a significant effect on the female and male patients (Table 2). Higher score of autonomy means able to resist social pressures to think and act in certain ways; regulates behavior from within; evaluates self by personal standards. Low score is concerned about the expectations and evaluations of others; relies on judgments of others to make important (Ryff *et al.*, 1995).

Males and females had a significant effect on their environment mastery. It means after the sessions they have a further developed sense of mastery and competence in managing the environment; controls complex array of external activities; makes effective use of surrounding opportunities; able to choose or create contexts suitable to personal needs and values (Ryff *et al.*, 1995).

Females and males showed significant P value for personal growth. After the sessions they have improved their feeling of continued development; sees self as growing and expanding; is open to new experiences; has sense of realizing his or her potential; sees improvement in self and behavior over time; is changing in ways that reflect more self-knowledge and effectiveness (Ryff *et al.*, 1995).

Table 1. The contents of the horticultural therapy (HT) sessions

Stage	Session	Contents	Form	Purpose
Establishing credibility	1	Self-introduction	Individual	Motivation for horticultural study
	2	Introduction to horticulture	Group	Motivation for horticultural study
	3	Drinking Kanji	Individual	Decreasing stress, Increasing comfort
Improving well-being and relationships	4	Making card with pressed flowers	Individual	Emphasis on personal choice and skill development. Increase independence and senses
	5	Planting Anthurium in a pot	Individual	stimulating senses, increasing hope and psychological well-being
	6	Making a bonsai plant	Individual	Mind tranquility, stimulating senses, comforting stresses and increase hope
	7	Developing a bottle garden	Individual	Increasing positive thinking through expectancy, increasing self-esteem through self-sufficiency, and expectancy for life value
Maintenance	8	Viewing photos of their previous activities	Group	Increasing positive thinking and self-awareness through establishment and maintenance of interpersonal relationships

Female’s positive relation P value is statistically insignificant. It means HT sessions were not affecting to the female’s positive relation. However, males’ P value is statistically significant. It means they have further developed warm, satisfying, trusting relationships with others; is concerned about the welfare of others; capable of strong empathy affection and intimacy; understands give and take of human relationships.

Females and males showed significant P value for purpose in life (Table 2). After the sessions they have developed goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; has aims and objectives for living (Ryff *et al.*, 1995).

Females and males showed significant P value for self-acceptance. After the HT sessions they acknowledges and accepts multiple aspects of self, including good and bad qualities; feels positive about past (Ryff *et al.*, 1995).

Table 2. Effects of sessions on hope and wellbeing concepts for males and females separately

Parameter	Male P value	Female P value
Well Being		
Autonomy	0.0020**	0.0037**
Environment mastery	0.0039**	0.0032**
Personal growth	0.0195*	0.0176*
Positive relation	0.0020**	0.0898
Purpose in life	0.0039**	0.0001**
Self-acceptance	0.0020**	0.0009**
Hope	0.0195*	0.0176*

*Significant at 95%, ** Significant at 99%

Hope and Wellbeing concepts are significantly different among the treatments (Table 3). Although there was no any significant effect of positive relation on female patients, when considering the whole sample, a

significant effect was observed for all the parameters (Table 3).

Table 3. Effects of sessions on hope and well-being concepts for both males and females

Parameter	P Value
Well Being	
Autonomy	0.0037**
Environment mastery	0.0002**
Personal growth	0.0002**
Positive relation	0.0022**
Purpose in life	0.0039**
Self-acceptance	< 0.0001**
Hope	0.0008**

**Significant at 99%

Hope

Hope of male and female were statistically significant. When considering the hospitalization people they have isolated life style and comparatively more stress and high levels of hopelessness. When planting an anthurium plant and bonsai plant, the activities were associated with the improvement of their hope. Higher hope in general is consistently related to better outcomes in academics, athletics, physical health, psychological adjustment, and psychotherapy (Snyder, 2002). Lab and clinical investigations have found that within five minutes of viewing a nature setting positive changes in blood pressure, heart activity, muscle tension, and brain electrical activity occur (Ulrich *et al.*, 1991).

The results of the present study consistent with a previous study conducted by Min *et al.*, (2014) which has reported that HT improves well-being and hope of rural women in Korea. According to Soderback *et al.* (2004) by providing HT to 46 patients with brain damage, emotional, cognitive, and/or sensory motor functions were improved and socialization; health, well-being, and life satisfaction were increased. Psychological wellbeing encompasses self-acceptance, positive relationships, autonomy, and control over one’s environment, life purpose, and personal

development. Results of the present study agree with the results of study conducted by Lee and Hawang (2007), which has reported that HT was effective to improve life purpose, self-identity and self-esteem for middle-aged women (Lee and Hawang, 2007).

Descriptive Statistics of the Sample

The sample consisted of 37.5% of male and 62.5% of female (Table 2). Most patients were belong to 36-56 years age category.

Table 4. Descriptive statistics of the sample

Demographic characters	Percentage (%)
Gender	
Male	37.50
Female	62.50
Age	
25-35	20.83
36-56	41.67
57-77	37.50
Education	
Below G.C.E O/L	12.50
G.C.E O/L	50.00
G.C.E A/L	37.50

To our knowledge, no studies have been conducted so far in relation to horticultural therapy activities in Sri Lanka. Therefore, this study provides novel information in Sri Lankan context which could be adopted by hospitals and other establishments which deals with elderly care and rehabilitation of physical and learning disables.

CONCLUSIONS

The present study revealed that HT activities can be used to improve the hope and wellbeing of the hospitalized patients. Hence, HT activities could be introduced to improve the quality of life of hospitalization patients in Sri Lanka.

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