

Plant Meditation as Part of Horticultural Therapy Reduces Stress Levels in Adults

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Abstract: *Key issues:* Stress is a typical factor and a normal emotion that develops in the mind as the body reacts to circumstances. *Methodology:* Thirty random samples were selected from College of Agriculture Vellayani randomly. Pre and post design study was adopted in this study, the participants were placed in the Horticultural therapy garden and were guided to plant meditation. The stress level was assessed before and after imparting plant meditation. The stress score was assessed using perceived stress scale. *Result and Discussion:* The mean perceived stress scale score of post - test was decreased after plant meditation. Post test score was comparatively less than pre - test score. *Conclusion:* The plant meditation as a part of Horticultural therapy was cost effective, non - invasive, non - pharmacological, free from side effects and can be used as an effective intervention to improve the quality of life among adults especially to relieve stress

Keywords: Horticultural therapy, Plant meditation, stress, adults

1. Introduction

Horticultural Therapy (HT) is an interdisciplinary approach to human development that integrates social and behavioural science with horticulture and environment (Beela and Reghunath, 2010). HT aids clients in acquiring new skills and regaining lost ones as a cognitive treatment. It is a restorative technique that improves memory, focus, sense of duty, and social connection with little to no adverse side effects. HT has also been demonstrated to reduce stress, increase feelings of tranquility and relaxation, foster a sense of accomplishment, and increase self - esteem. According to Dam et al. (2018), the word "mindfulness" is used to designate a range of methods and practices that have similarities in terms of attention, awareness, and acceptance. Meditation is frequently used to improve general health and treat disorders brought on by stress. To develop mindfulness, the program's participants must be interested and willing to participate (Matchim et al., 2011; Vago, 2012).

Plant Meditation is a method used in Horticultural Therapy which initiates people to connect with plants through visualization and feel the inner power within oneself during meditation. (Sathish and Beela, 2023). One form of supplementary treatment that addresses the mind and body is meditation.

The benefits of meditation can include a peaceful mind and a profound sense of relaxation. The sensation of calm, peace, and balance that meditation can provide you can benefit your physical health as well as your mental health. You can relax and reduce stress by refocusing your attention on something serene. By meditating, you can develop your ability to keep your mind clear and peaceful.

The Perceived Stress Scale (PSS; Cohen et al., 1983) is a 14 - item questionnaire used to assess how stressful one sees certain life circumstances to be. The purpose of the PSS was

to evaluate how unpredictable, unmanageable, and overloaded respondents felt their lives were.

2. Literature Survey

Scott (2015) referred horticultural therapy as a process that can be passive or active, using gardens and plants, rehabilitative as well as therapeutic activities to impact people's health and outcomes positively. According to Pouya, (2019), horticulture is used as a method of treatment for different age groups of people in different environments to promote health, well - being and social cohesion. Mindfulness meditation is a non - invasive, effective therapy for stress management and positively affects one's physical and mental health (Baer et al., 2012). Several studies have examined the relationship between mindfulness and stress in a college population without using a mindfulness intervention; these studies measured college students' levels of mindfulness in relation to a variety of factors that are associated with stress, depression, anxiety, and general psychological health (Bodenlos et al., 2013; Hou, Ng, & Wan, 2015; Palmer & Roger, 2009). Health benefits of meditation were examined by scientific research and existing findings indicate an enormous amount of advantages to humankind by improving levels of well - being (Bostock et al., 2019; Galante et al., 2014)

Lise Juul (2018) carried out a similar study titled "Effectiveness of Mindfulness - Based Stress Reduction in Self Stress and Self - Paying Community Setting." Utilizing the perceived stress scale, its mean was decreased from 22.6 to 16.3. Stoddard (2017) found that 70% of first - year students reported experiencing moderate levels of stress. Jeffrey M. Greeson (2018) looked at these symptoms. The findings demonstrated a strong and direct relationship between mindfulness, stress ($r = - 0.384, p0.001$), and stress symptoms (before mean (SD) 20.59 (14.97), post mean (SD) 14.13 (11.21), change mean (SD) - 6.46 (11.32), $df 198, t=8$,

Volume 12 Issue 3, March 2023

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p0.001, d=0.57). Another study looked at the coping mechanisms used by first - year college students to deal with stress. It concluded that mindfulness was significantly correlated with rational coping in stressful settings and significantly correlated with emotional coping (Palmer & Rodger, 2009). In a related study, it was discovered that college students were more willing to practice mindfulness meditation if they thought it would be worth the effort given the rewards they would experience (Rizer et al., 2016). The Health Belief Model is the name of this concept. In a pre - post study, higher levels of mindfulness in a clinical adult sample were substantially associated with lower levels of felt stress, sadness, anxiety, and higher psychological wellbeing, all with moderate to large effect sizes (Carmody & Baer, 2008). (Messer et al., 2016), discovered that mindfulness meditation helps students deal with stress, hope, anxiety, emotion - focused coping, sadness, burnout, and empathy.

3. Methods

Research approach

To achieve the main goal of this study, a qualitative technique was used. Determining the effect of plant meditation in Horticultural treatment on stress levels is the main goal of this study. Pre - post - test design was the implied research approach for this study.

Location

The study was conducted in The Horticultural Therapy Garden, Department of Community science, College of Agriculture, Vellayani, Thiruvananthapuram, Kerala

Sampling method

Simple Randomisation method was used to select the sample. The adults were selected from the lists of PG and PhD students from College of Agriculture, Vellayani

Sample

A total of Thirty one samples were adults of age group 20 - 30 years were selected.

Main study: The main study will be done in three phases

Phase I: Pre - Intervention Assessment

1) Personal profile

The personal profile was collected from students.

2) Assessment of stress level

The pretest of stress was assessed by using perceived stress scale (PSS) which was given individually

Phase II: Imparting Plant Meditation

Plant meditation

The guided plant meditation was given to the selected participants. The participants were placed in the Horticultural therapy garden and were asked to close their eyes and to hear the guidance. Guidance was given to observe the sounds of nature and slowly connect with the nature and tree. After a silence of 20 minutes they were guided to transcend to feel the power of the tree, sense the nature of tree and to become one with tree.



Figure 1: Plant meditation through visualization



Figure 2: Guided Plant Meditation for adults

Phase III: Post intervention assessment

The sample were once again subjected to perceived stress scale to assess post level of stress after plant meditation

4. Results/ Discussion

Table 1: Comparison of perceived stress pre and post plant meditation

Perceived Stress Scale	Stress level	No. of Participants	Percentage %
Pre Test	Low stress	1	3.23
	Medium stress	30	96.77
	High stress	0	0
Post Test	Low stress	8	25.8
	Medium stress	23	74.2
	High stress	0	0

The table 1 depicts that, in pre - test, 30 (96.77%) of the adults were having medium stress, 1 (3.23%) of the adults were having low stress, none of them were having high stress

In post - test after plant meditation, 23 (74.2%) of the adults were having medium stress, 8 (25.8%) of the adults were having low stress and none of them were having high stress.



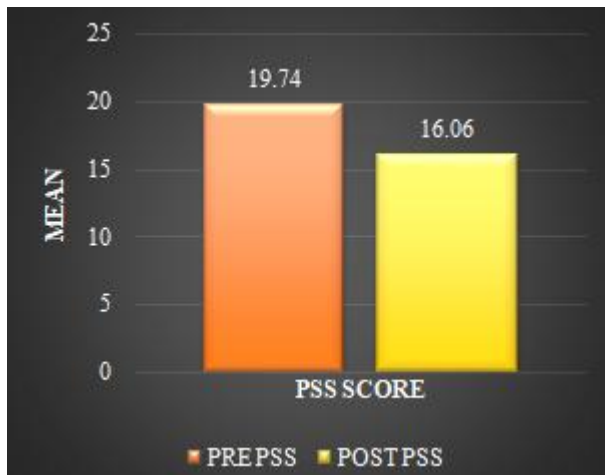
Lise Juul (2018) carried out a similar study titled "Effectiveness of mindfulness - based stress reduction in self stress and self - paying community setting. " Utilizing the perceived stress scale, its mean was decreased from 22.6 to 16.3. This is in line with a Stoddard (2017) study, which found that 70% of first - year students reported experiencing moderate levels of stress.

Table 2: Comparison of PSS Scores Pre and Post Plant Meditation

Perceived Stress Scale	N	Mean	S. D	'T' Value	Level of Significance
Pre Test	31	19.74	3.975	4.48	0.00
Post Test	31	16.06	4.179		

Table 2. Depicts the mean pre - test and post - test perceived stress score was 19.74 and 16.06 and the standard deviation in the pre and post perceived stress scores was 3.975 and 4.179 respectively. The paired t test value was 4.48, which was significant at 0.001, hence it was evidenced that the

plant meditation was more effective in terms of reducing stress among the adults



In his work, Mindfulness Meditation Targets The Trans Diagnostic Symptoms Implicated In Stress - Related Disorders, Jeffrey M. Greeson (2018) looked at these symptoms. The findings demonstrated a strong and direct relationship between mindfulness, stress ($r = -0.384$, $p < 0.001$), and stress symptoms (before mean (SD) 20.59 (14.97), post mean (SD) 14.13 (11.21), change mean (SD) -6.46 (11.32), $df = 198$, $t = 8$, $p < 0.001$, $d = 0.57$). Similar study where, the mean and SD of the PSS score were 17.7 and 5.5, respectively, which was comparable to a study conducted in Tamil Nadu by Sakthivel et al., (2022) with a mean score of 17 and SD of 6.5. Another study looked at the coping mechanisms used by first - year college students to deal with stress. It concluded that mindfulness was significantly correlated with rational coping in stressful settings and significantly correlated with emotional coping (Palmer & Rodger, 2009). In a related study, it was discovered that college students were more willing to practice mindfulness meditation if they thought it would be worth the effort given the rewards they would experience (Rizer et al., 2016).

5. Conclusion

This present study was undertaken to assess the impact of plant meditation in Horticultural Therapy on stress level. The tool used for data collection was standardised perceived stress scale for assessing stress level and the PSS scores showed that the adults experienced positive changes in the stress levels. The mean PSS score of post test score was comparatively less than pre - test score. The daily engagement with plant meditation as part of horticultural therapy for 30 minutes for consecutive two weeks among the adults had shown significant difference in pre - test and post - test level of stress. Thus Horticultural Therapy was effective in terms of reducing the level of stress among the adults. So the plant meditation as a part of Horticultural therapy was cost effective, non - invasive, non - pharmacological, free from side effects and highly feasible. It is concluded that Plant Meditation can be used as an effective intervention to improve the quality of life among adults

6. Future Scope

Based on the findings of the study, the recommendations offered for future research were,

- A similar study can be replicated on a large sample to generalise the study findings
- A similar study can be conducted with experimental research design having control group and experimental group
- A similar study can be conducted with differently abled on the impact of plant meditation

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