International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2025: 7.089

Effect of Horticulture Activity on Occupational Performance of Person with Intellectual Disability

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Abstract: ***Aims: To find out the Effect of Horticulture Activity on Occupational Performance of Person with Intellectual Disability. Objective Of Study: The purpose of the study was to evaluate the effect of horticulture activity on Occupational Performance of person with Intellectual Disability. Methodology: Totally 30 sample divided into two groups 15 in control group and 15 in experimental group based on severity. Conclusion: From the results of this study the researcher concludes that horticulture activity is an effective method of treatment to improve occupational performance in adult with intellectual disability. Result: Statistical significance is present in experimental group than control group with regard to effect of horticulture activity on occupational performance of person with intellectual disability.***

Keywords: Intellectual disability, occupational performance, horticulture activity

1. Introduction

Intellectual disability is a condition that limits intelligence and disrupts abilities necessary for living independently. Signs of this lifelong condition appear during childhood. Most people with this will need some degree of assistance throughout their lives. Support programs and educational offerings can help with managing symptoms and effects.

An intellectual disability is when limitations in your mental abilities affect intelligence, learning and everyday life skills. The effects of this can vary widely. Some people may experience minor effects but still live independent lives. Others may have severe effects and need lifelong assistance and support.

Occupational performance is a specific kind of performing that includes the intention to perform, an outcome of the performance, and an assessment of the performing by the performer; the term occupational performance excludes many kinds of performing that do not meet the condition.

Horticulture is derived from the Latin words "hortus" (garden) and "cultura" (cultivation), meaning the cultivation of garden plants. It involves the science and practice of growing, managing, and processing fruits, vegetables, flowers, and ornamental plants. Unlike agriculture, which focuses on large-scale crop production, horticulture emphasizes smaller-scale, intensive cultivation. Horticulturists use a mix of scientific knowledge and practical skills to enhance plant growth, improve crop yields, and contribute to environmental sustainability.

Need For Study
People With This Condition Develop Symptoms Like Slowed reading speed, Difficulty Thinking and Understanding, Distractibility, Difficulty Focusing, daily living and work leisure. Hence Attempt Has Been Made with Horticulture Activity to Improve Occupational Performance in Intellectual Disability.

Aim
To find out the Effect of Horticulture Activity on Occupational Performance of person with Intellectual Disability.

Objective of Study
- To assess and evaluate occupational performance by using Canadian occupational performance measure (COPM)
- To determine the effect of horticulture activity on occupational performance with intellectual disability

2. Methodology

Research Design:
Quasi -Experimental Research Design

Population:
A total number of consecutive samples of 30 subjects were taken in this study. The subjects were divided into two groups as experimental and control group. The control group consist of 15 subjects, and experimental group consist of 15 subjects.

Sample technique:
Convenient sampling technique was adopted.

Study place:
Sree Ramaskrishna Mission Vidyalaya, Periyanaikenpalayam, Coimbatore.

Duration of the study:
3 Months

Inclusion criteria:
- Who are diagnosed as mild to moderate intellectual disability by Psychiatrist
- Age group 10 to 25 years old Both gender were taken
- Not included with other associated disorder

Exclusion criteria:
- Who are diagnosed with other medical condition
- Were excluded other age group
- Were excluded severe intellectual disability

- Were excluded intellectual disability with cerebral palsy

3. Procedure

Samples 30 students with the diagnosis of Intellectual Disability have been taken through convenient sampling. Samples were taken from Ramakrishna mission in Coimbatore as per selection criteria pre-test was taken by using occupational performance level was assessed by CANADIAN MODEL OF OCCUPATIONAL PERFORMANCE (COPM) scale. The samples are divided into two groups 15 in control group and 15 in experimental group based on severity. Intervention was given to the experimental group for period of 3 months. It includes 36 sessions, 3 sessions per week each session last for 45 minutes. Post-test was conduct for both the control and the experimental group with COPM scale after the intervention.

Intervention Plan
Session 1–2: Introduction & Pre-Test

Rapport building
Programme orientation
Baseline assessment

Activities:
- Self-introduction (therapist & participants)
- Explanation of horticulture therapy benefits
- Garden area orientation
- Safety rules explanation
- Pre-test assessment

Session 3–4: Relaxation Activities & Introduction to Tools

Relaxation Activities:
- Deep breathing exercises
- Gentle stretching
- Guided imagery (nature visualization)

Introduction to Tools:
- Trowel – digging small holes
- Spade – soil turning
- Hoe – loosening soil
- Rake – levelling
- Watering can – irrigation

Session 5–10: Soil Preparation

Activities:
- Warm-up exercises
- Digging soil
- Removing stones and weeds
- Breaking hard soil clumps
- Levelling the surface
- Mixing compost/manure

Session 11–13: Fencing

Activities:
- Measuring garden area
- Placing wooden sticks
- Fixing net/wire fencing
- Knot tying practice

Session 14- 18: Sowing Seeds + Watering

Activities:
- Seed selection
- Measuring correct spacing
- Digging small holes
- Placing seeds properly
- Covering with soil
- Gentle watering

Session 18–19: Watering (Routine Maintenance)
- Controlled watering
- Recording plant growth

Session 20–24: Fertilization
- Introduction to organic manure
- Measuring fertilizer quantity
- Mixing compost
- Applying around plant roots

Session 25–28: Weeding
- Identifying weeds
- Manual removal
- Using weeding tools
- Cleaning garden area

Session 29–30: Watering (Growth Monitoring Phase)
- Scheduled watering
- Identifying plant growth changes Removing dry leaves

Session 31–34: Picking of Vegetables
- Identifying mature vegetables
- Safe plucking technique
- Sorting vegetables
- Cleaning and storing

Session 35– 36: Post-Test & Termination
- Reassessment
- Comparison with pre-test

4. Data Analysis and Results

Table 1: Comparison of Occupational Performance between Control Group and Experimental Group

S. No	COPM	Mean	S. D	t-value	p-value
1	Control group	3.93	1.38	2.8419	0.013
2	Experimental group	4.93	0.79		

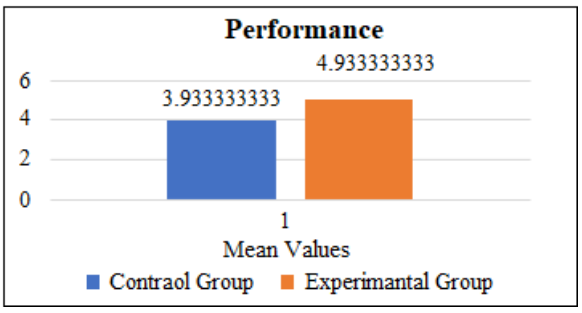

Table 1 and graph 1 show that comparison of occupational performance between control and experimental group mean value are 3.93 and 4.93. `t` value is 2.8419 and `p` value is 0.013. Which is considered to be statistically significant.

Table 2: Comparison of Satisfaction between Control Group and Experimental Group

S. No	COPM	Mean	S. D	t-value	p-value
1	Control group	2.06	0.59	2.8419	0.013
2	Experimental group	3.06	1.33		

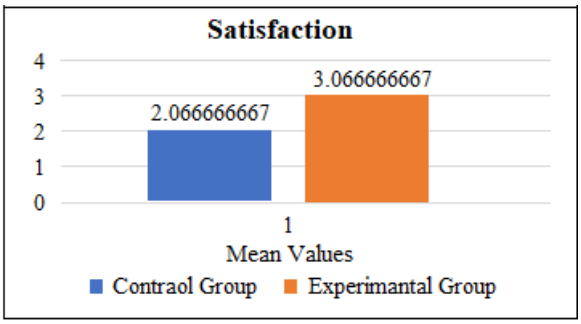

Table 2 and graph 2 show that comparison of occupational performance between control and experimental group mean value are 2.06 and 3.06. `t` value is 2.8419 and `p` value is 0. 0017.Which is considered to be statistically significant

5. Discussion

The present study was conducted to determine the effect of horticulture activity on the occupational performance of individuals with intellectual disability. A total of 30 students diagnosed with mild to moderate intellectual disability by a psychiatrist were selected through convenience sampling. Participants were within the age range of 10 to 25 years and included both males and females. Pre-test assessment of occupational performance was carried out using the Canadian Occupational Performance Measure (COPM), focusing on individuals with moderate severity of intellectual disability. Based on severity levels, the samples were equally divided into a control group (n = 15) and an experimental group (n = 15). The experimental group received horticulture-based occupational therapy intervention for a period of three months, consisting of 36 sessions conducted three times per week, with each session lasting 45 minutes, while the control group did not receive the intervention. Following the intervention period, post-test assessments were conducted for both groups using the COPM to evaluate changes in occupational performance.

Paired 't' test has been used to compare pre-test and post values of control and experimental group, unpaired 't' test has been used to compare pre-test values of control and experimental group and also post- test values of control and experimental group.

Table 1 and graph 1 show that comparison of occupational performance between control and experimental group mean value are 3.93 and 4.93. `t` value is 2.8419 and `p` value is 0.013. Which is considered to be statistically significant.

Table 2 and graph 2 show that comparison of occupational performance between control and experimental group mean value are 2.06 and 3.06. `t` value is 2.8419 and `p` value is 0.0017. Which is considered to be statistically significant.

The similar research is finding by Hyo-Jung Son they conducted study on evaluated horticulture therapy program designed to improve work performance and interpersonal relationships in adults with intellectual disabilities working at a sheltered workshop. Pre- and post-program assessments measured functional adaptive behaviour, interpersonal negotiation skills, hand function, job performance, and physiological indicators. Results showed significant improvements in interpersonal skills, adaptive behaviours, and physical abilities related to job performance, including hand agility and grasping.

Mary E. DeHart-Bennett, the study evaluated Horticultural occupations provide therapeutic, rewarding employment for persons with intellectual disabilities. The findings of this study have several implications in terms of the vocational training and placement of persons with intellectual disabilities in the horticulture industry. Sixty percent of the employers agreed that these individuals could perform tasks in entry-level skills. Thirty-five percent of the respondents offered no opinion on job performance of disabled workers

Present study has demonstrated that the patients in the experimental group who received horticulture activities shows more statistically significant than the control group. Therefore, the present study rejecting the null hypothesis and accepting the alternative hypothesis. The result supports a tentative conclusion that horticulture activity is a factor in the increasing performance, satisfaction in intellectual disability which is increased occupational performance. Based on the result, horticulture activities can be used as a therapeutic modality on symptoms of intellectual disability.

6. Conclusion

From the results of this study the researcher concludes that horticulture activity is an effective method of treatment to improve occupational performance in adult with intellectual disability.

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