

Comparing Horticultural Therapy (HT) to Traditional Activities in Dementia Care Programs: Assessing Differences in Engagement and Affect

Christina M. Gigliotti, M.S., Shannon E. Jarrott, Ph.D., & Michelle L. Stevenson, Ph.D.

Virginia Polytechnic Institute and State University



ABSTRACT

Engaging persons with dementia in meaningful activities supports well-being; however, care staff are challenged to identify group activities that are developmentally and generationally appropriate. In this study, we compared a randomly assigned treatment group (HT) to a comparison group (traditional activities) on outcome variables, including engagement, affect, and problem behaviors. HT programming was implemented twice weekly at 4 treatment sites for 6 weeks, while traditional activities were also observed during that time period.

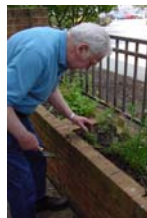
Results revealed no statistical differences between the treatment and control groups on the three affective domains; however, levels of adaptive behavior differed between the two groups, with the treatment group demonstrating higher levels of active, passive, & other engagement, and the comparison group demonstrating higher levels of self-engagement. Our results highlight the importance of capturing the participants' responses as well as indicators of the social and physical environment to gain a holistic understanding of the intervention and associated outcomes. An acute focus on the facilitator's characteristics and methods of implementation would provide greater insights about the factors that contribute to desired outcomes in the program participants

INTRODUCTION

- HT has demonstrated its utility as an inclusive programming option for persons with a wide range of cognitive and skill levels.
- The theory of Environmental Press identifies the behavioral and affective indicators exhibited by persons that achieve an optimal person-environment fit; a balance between the individual's competence level and level of demand in their environment.
- HT considers both the environment and individual's competence level to facilitate an optimal person-environment fit.
- HT has facilitated higher levels of social & productive engagement as well as higher levels of positive affect than traditional activities among ADS clients with dementia.
- In the current study we compared the behavioral and affective responses of a randomly assigned intervention group, receiving HT, to a comparison group, receiving traditional activity programming.
- Limitations from previous studies were addressed through the enhanced sample size and diversity of the participants and sites. In addition, a comparison group enabled the researchers to make inter-individual comparisons.

SAMPLE

Characteristic	All	HT	Traditional
Percent Female	53.10%	56.80%	49.10%
Mean Age	80.09	81.34	78.36
S.D (Range)	8.05 (47-100)	7.17 (57-100)	8.92 (47-94)
Percent White	93.00%	94.60%	90.60%
Mean Barthel	62.41	63.50	61.06
S.D (Range)	20.51 (0-100)	19.26 (0-100)	22.08 (0-100)
Mean MMSE	9.62	10.77	8.12
S.D (Range)	7.76 (0-30)	7.08 (0-28)	8.41 (0-30)



METHODS

- $N = 129$, (75 in HT; 54 in comparison group)
- Participants were persons enrolled at one of eight adult day care programs or nursing homes and had a diagnosis of dementia.
- Data were collected at eight sites, four of which received HT programming and four continued with traditional programming.
- Trained students with HT or dementia-care background facilitated HT activities twice weekly, using both plant and plant related materials.
- Activity professionals varying in education and programming experience facilitated the traditional activities at the control sites.
- During each activity, three trained researchers used observational scales to capture participants' behaviors & affective responses to programming, recording scores every five minutes for up to 6 participants for the duration of the activity. Data were collected twice over a 6-week period and averaged for each person.

MEASURES

An ordinal scale was used to indicate the duration of each timeframe (0: not at all, 1: $\leq 1/2$ observation, 2: $> 1/2$ observation) characterized by each type of engagement & affect.

	Menorah Park Engagement Scale
Active(AE)	Active Engagement in presented activity
Passive(PE)	Passive engagement in presented activity
Self(SE)	Repetitive or self-stimulating behaviors
Non(NE)	Asleep or disengaged from an activity: "zoned out"
Other(OE)	Doing or attending to an activity other than the target activity presented

	Apparent Affect Rating Scale
Pleasure	Laughing, singing, smiling, kissing, clapping, sparkling eyes
Interest	Participating in task, maintaining eye contact, looking around, responding to cues, turning body or moving towards person or object
Anxiety/Sadness	Repetitive calling out, restlessness, agitated movement, crying, moaning, head in hand, overt statements of anxiety or sadness

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RESULTS

Preliminary analyses indicated that the data were positively skewed and could not be corrected using logarithmic or square root transformation; therefore, a non-parametric test, the Wilcoxon-Mann Whitney test was utilized.

ENGAGEMENT	HT	Traditional	z-score
% time exhibited AE "2"=>1/2 obs	35.6	20.7	-2.90*
% time exhibited SE "2"=>1/2 obs	2.5	11.7	-4.60*
% time exhibited NE "2"=>1/2 obs	13.7	9.5	-1.45
% time exhibited PE "2"=>1/2 obs	41.5	28.8	-2.72*
% time exhibited OE "2"=>1/2 obs	24.8	11.1	-3.47*
AFFECT	HT	Traditional	z-score
% time exhibited pleasure "2"=>1/2 obs	8.6	9.4	-1.54
% time exhibited interest "2"=>1/2 obs	58.0	65.1	-0.09
% time exhibited anxiety "2"=>1/2 obs	1.2	0.9	-1.26

BEHAVIOR PROBLEMS

	HT	Traditional	z-score
Ave. number of behavior problems exhibited	1.17	0.85	-0.225
Ave. amount of time exhibiting behavior problems	02:03	00:02	-0.904

(* $p \leq .05$, ** $p \leq .005$).

CONCLUSIONS

- Our work represents an advance of the HT literature because we made inter-individual comparisons between two randomly assigned groups of greater size and heterogeneity than previous HT studies.
- Although there were no significant differences in affect, behavior problems, and non-engagement, HT participants were significantly more likely than the traditional group to exhibit active engagement, passive engagement, and other engagement for more than half of the observation. These outcomes indicate that HT activities were better able to engage the participants and capture their attention. On the other hand, the traditional group was more likely to exhibit self-engagement, which is often a sign of discomfort or an unmet need.
- Anecdotal observations suggest that future research must consider the context in which programming is presented to elders with dementia. Because the importance of the physical and social environment have been demonstrated in the dementia-care literature, this information should be assessed, including an examination of the manner in which facilitators present activities and support participant success.
- HT offers dementia-care programmers a desirable intervention alternative in both adult day programs and nursing home settings for individuals representing a wide range of ability levels.