

Impact of a Horticultural Therapy Program on the Well-Being of Low-Income Community Dwelling Older Adults

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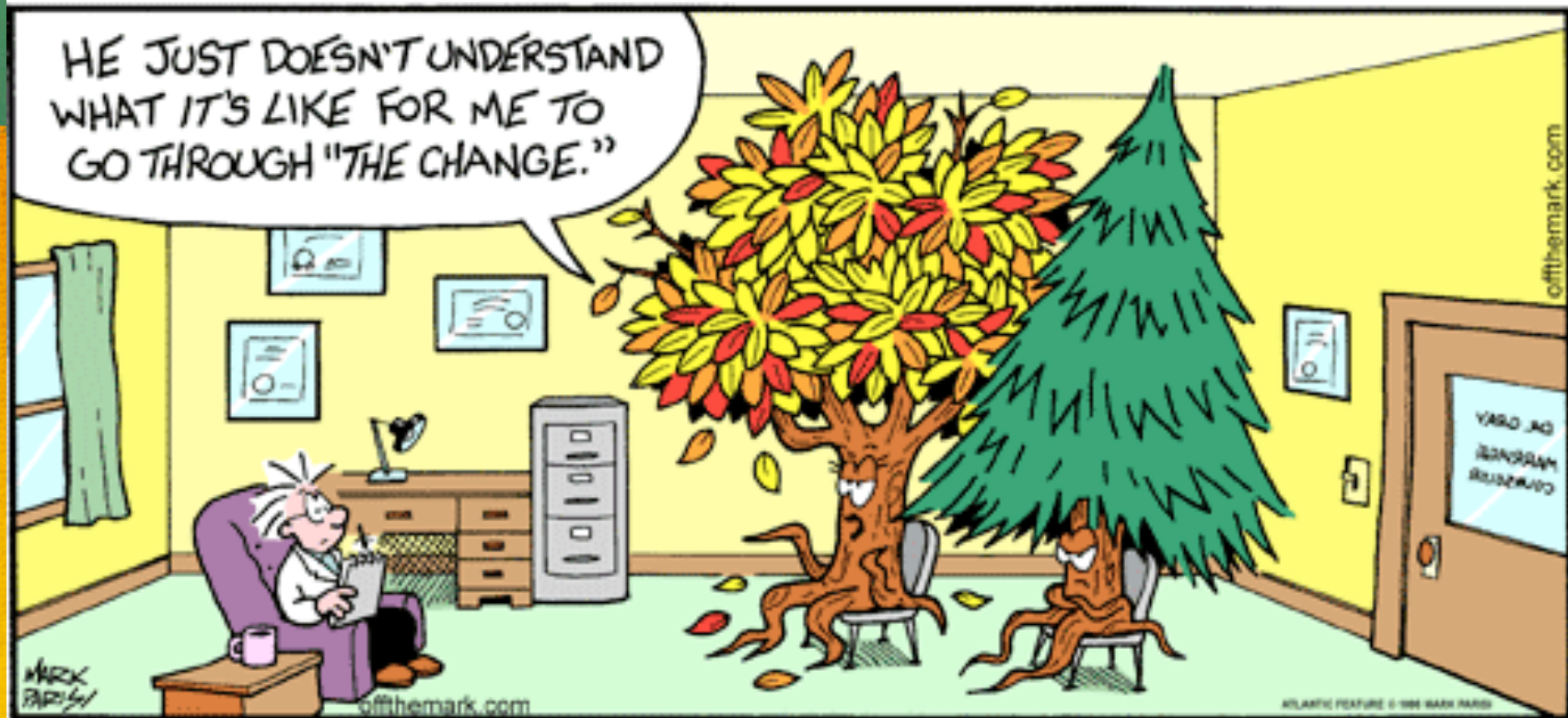


Horticultural Therapy

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So, What's the Problem?

- Our aging population - The Baby Boomers turn 65
- Older Adults share unique challenges
- Research has focused on treating illness in the elderly, rather than on ways to keep them healthy

So, What's the Problem?

- In light of our aging population, it makes sense to focus on strategies that maintain health and well-being, rather than on “fixing” people once they are ill.
- Let's keep people well by helping them age **SUCCESSFULLY** (If it ain't broken, we don't have to fix it!)

What is *Normal* Aging?

Aging without biological or mental pathology

- Physical effects – “wear & repair” model
 - our physical bodies are worn down by environmental stresses, toxins, injuries and use.
 - the body can replace and repair much of the wear, but this ability declines with age

What is *Normal* Aging?

Normal Changes in Cognitive Functioning are seen in:

- Information Processing
- Memory
- Intelligence

Late Life Challenges

There are *challenges* that come with aging.

This is where most of the research is focused.

The most common are:

- ✓ Depression
- ✓ Complicated Bereavement
- ✓ Cognitive Impairment
- ✓ Chronic Illness/Disability
- ✓ Prolonged Caregiving of a loved one

1. CALL DENTIST ABOUT MISSING DENTURES.
2. CALL DOCTOR ABOUT EMBARRASSING NEW DISCOMFORT.



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Components of Successful Aging

The McArthur Study

- Low risk of disease & disease-related disability
- High mental & physical function
- Active engagement with life

What we need:

Interventions for successful aging

- Effective
- Affordable
- Easy to implement

Why Horticultural Therapy?

Literature shows many positive benefits from working with plants.

- Psychological/Emotional Benefits
- Social Benefits
- Intellectual Benefits
- Physical Benefits

Why Horticultural Therapy?

In addition to the benefits of working with plants:

- It is a relatively safe activity
- It is cost effective
- Active engagement with life
- The scope can be adjusted to fit the application – a community garden or potted plants for a room or apartment.

The Primary Purpose of this Study

To explore the impact of a horticultural therapy program on enhancing quality of life for residents of age restricted communities.

Additional Goals of this Study

To contribute to empirical research
utilizing HT

To develop a standardized
curriculum which can be easily
repeated for additional research
opportunities.

Quality of Life?

Quality of life was measured specifically as related to:

- psychological well-being
- self-esteem
- self efficacy and
- social connectedness.

What Did I Want To Learn?

- Will the HT intervention have a positive impact on well-being, self-esteem and self efficacy?
- Will the HT intervention minimize feelings of social isolation?

Based on the Literature, This is What Was Expected:

Upon completion of the HT intervention there would be a statistically significant increase in scores for participants compared to a waitlist control group on measures of well-being, self-esteem, self efficacy and social connectedness.

Challenges

Finding a curriculum to use for the HT intervention.

What measures to use.

Finding participants.

HT Intervention Fun With Herbs

Curriculum



Original Curriculum - Virginia Tech Research Team
of Gigliotti, Jarrott, Gaines, Cook, Pecora, Predny
& Relf, 2004

*Horticulture Therapy and Seniors: A Manual for
Recreational Therapists and Master Gardeners*

Fun With Herbs Curriculum

*Horticulture Therapy and Seniors: A Manual for
Recreational Therapists and Master Gardeners*

Original Curriculum

- Used in an Adult Day Care Setting
- Activities are 20 to 40 minutes in length
- 40+ separate activities divided between growing and tending herbs, using herbs in crafts and using herbs in cooking.
- Activities conducted multiple times per week.

Fun With Herbs Curriculum

Restructured Curriculum

- Activities from VA Tech Curriculum were combined into six, 90 minutes classes.
- Participants received a booklet with class outline, informational sheets for each herb studied, and recipes for all cooking activities.

Fun With Herbs Curriculum

Each class consisted of four main components:

1. Herb of the Day
2. Learning a Planting Technique
3. Main Activity
4. Cooking a Snack

Fun With Herbs Curriculum

CLASS ONE:

Herb of the Day: All Herbs

Planting Technique: Growing Herbs from Seed

Main Activity: Designing an Herb Garden

Cooking: Bagels & Herb Cream Cheese

CLASS TWO

Herb of the Day: Chives

Planting Technique: Freezing Herbs

Main Activity: Planting Seeds

Cooking: Cheese & Chive Biscuits

Fun With Herbs Curriculum

CLASS THREE

Herb of the Day: Basil

Planting Technique: Air-drying leafy herbs

Main Activity: Making Herbal heating pads

Cooking: Bruchetta

CLASS FOUR

Herb of the Day: Mint

Planting Technique: Planting Mint

Main Activity: Propagation from cuttings

Cooking: Herbal Mint Tea

Fun With Herbs Curriculum

CLASS FIVE

Herb of the Day: Lavender

Planting Technique: Harvesting Herbs for Flowers

Main Activity: Lavender Soap

Cooking: Lavender Cookies

CLASS SIX

Herb of the Day: Oregano

Planting Technique: Preparing Soil for Gardening

Main Activity: Planting an herb garden

Cooking: Pita Pizzas

Let's take a look at the first class

Class One

Herb of the Day: All Herbs

Planting Technique: Growing Herbs
from Seed

Main Activity: Designing the Herb
Garden

Cooking/Snack: Bagels and Herb
Cream Cheese

HT Herb Class - Materials List per Class

Class One	
General Materials	
Tarp for table	Paper Plates
Wet Wipes	Napkins
Paper Towels	Paper Cups
Trash Bags	
Exploring Herbs	
Herb ID Cards	Herb Scented Lotions, candles, creams, Teas
Gardening Books - Herbs	Sample of various herb plants
Handout - List of Herbs & Uses	
Growing Herbs From Seed	
Handout - Growing seeds	
Examples of seeds to show	
Planning the Herb Garden	
Packets of Seeds	Pencils
White Paper	Markers
Fine Tip Sharpie Pens	Plant Markers (popsicle sticks)
FOOD - Herb Spread and Bagels	
24 oz softened cream cheese	2 doz mini bagels - pre-sliced
12 4" sprigs of herbs: thyme, lavender, chives, lemon balm, rosemary, oregano	
KITCHEN SUPPLIES	
Scissors for cutting herbs	6 small mixing bowls
Small bowls to hold herbs	Measuring cup
Forks or spoons	Plastic knives

CLASS ONE

HERB OF THE DAY (10 min):

Exploring Herbs

Bring in examples of as many fresh and dried herbs as possible to facilitate exploration of various herbs. Take turns smelling, touching and talking about the different herbs and what they are used for. Also have lotions and candles with herb scents to try. Have gardening books, magazines and cards with pictures and descriptions of herbs for participants to look through.

REFER TO: HANDOUT PAGE #2 CULINARY HERBS to discuss all the different uses for herbs. Encourage participants to talk about what herbs they use and how they use them.

Herbs	Used For
Argula	Arugula is technically known as a salad green or salad herb. Add to lettuce, tomatoes and any other mixed baby salad greens, and create new and exciting taste sensations.
Basil	Basil is considered one of the most important and highly used herbs in the culinary world and is popular in the cooking of many types of cuisine. The strong, clove-like flavor is essential to many Italian recipes and it is paired most often with tomatoes.
Bayleaf	Bay leaves greatly improve flavor if you are cutting down on salt. Add a bay leaf or two to marinades, stock, pâtés, stews, stuffing and curries.
Bergamot	Although limited in its culinary uses, bergamot imparts a wonderful citrus-like flavor and fragrance that complements fruits and summer beverages and teas.
Chives	Chives are a mild member herb of the onion family. Chives has many uses and can be added to potato salad, baked potatoes, soups, salads, omelets, dips and spreads, pastas and sauces.
Cilantro	Cilantro is used in many cuisines around the world. Most notably it is used to enliven Mexican and South American food as well as as Thai and Vietnamese.
Dill	Dill weed is good in soups, omelets, seafood dishes, herring, salmon, potato salads, and steamed vegetables. Dill seed is used in breads, pickling, cabbage dishes, stews, rice and cooked root vegetables.
Lemon Balm	Lemon balm is a lemon-scented herb of the mint family. For a tasty general seasoning, use it in tandem with tarragon. Try adding some freshly minced leaves to lamb or fish marinades for the grill.
Marjoram	Marjoram is an herb that has a mild, sweet flavor similar to oregano (it is of the same family - Origanum) with perhaps a hint of balsam. It is said to be "the meat herb" but it compliments all foods except sweets.
Mint	Mint is an herb that comes in many varieties such as peppermint, spearmint, apple mint, lemon mint and even chocolate mint. Mint came to the New World with colonists, who used it in tea for medicinal purposes.
Greek Oregano	Oregano is an herb that derives its name from two Greek words meaning "the joy of the mountain". It is a hardy member of the mint family that has been used for flavoring fish, meat and sauces since ancient times.
Parsley	Use fresh or dried parsley in any recipe. Especially good in omelets, scrambled eggs, mashed potatoes, soups, pasta and vegetable dishes as well as sauces to go with fish, poultry, veal and pork. Use fresh leaves as garnish.
Rosemary	Rosemary's aromatic flavor blends well with garlic and thyme to season lamb roasts, meat stews, and marinades. Rosemary also enlivens lighter fish and poultry dishes, tomato sauces, and vegetables.
Sage	Sage enhances pork, lamb, meats, and sausages. Chopped leaves flavor salads, pickles, and cheese. Crumble leaves for full fragrance. Use ground Sage sparingly as foods absorb its flavor more quickly.
Tarragon (French or Spanish)	Tarragon, together with parsley, chervil, and chives make a traditional French blend, Fines Herbes. Tarragon is exceptional in egg dishes, poached fish, mushrooms and other vegetables.
Thyme	Thyme is included in seasoning blends for poultry and stuffing and also commonly used in fish sauces, chowders, and soups. It goes well with lamb and veal as well as in eggs and croquettes. Thyme if often paired with tomatoes.

Links for Recipes: www.epicurious.com; www.foodnetwork.com; www.cooking.com; www.allrecipes.com

Relaxing Herbs : **Mild:** Borage, Roman chamomile, hyssop, lavender, lemon balm. **Moderate:** Mugwort, black cohosh, St. John's wort, , chamomile. **Strong:** wild lettuce, passionflower, Jamaica dogwood, valerian.

CLASS ONE (CONT)

PLANTING TECHNIQUE (10 min):

Growing From Seed

REFER TO: HANDOUT PAGE #3 GROWING HERBS FROM SEED

To be successful in growing herbs it is important for participants to understand the basics of growing plants from seeds and the pitfalls to be careful of. Involve more experienced participants in sharing their successes and failures in growing plants from seed.

Growing Herbs from Seed

- ① Choose your seeds. Think about the herbs you use most often and the kind of cooking you tend to do. For example, you may not have much use for lavender, but chives and sage might be key elements of some of your favorite recipes.
- ② Find a well-lit spot in your house. Herbs do best with five hours of light a day. If you live in a warmer climate, you may need to water more frequently. Also, avoid placing pots near heating vents, which will dry out your plants.
- ③ Keep your indoor herbs moist but don't over water them. Check the soil of your plants daily.

How to Sow Seeds Indoors

- ① Choose your seed-starting container. Nearly any container with drainage will do, but good candidates include milk carton bottoms, egg cartons, plastic produce boxes, peat pots and special seed-starting flats. (Punch drain holes into containers that need them.)
- ② Plant seeds in sterile seed starting mix. It has no soil to cause disease problems and is lightweight — perfect for baby plants to get off to a good start.
- ③ Follow seed package directions about the depth of planting. As a rough rule, the larger the seed, the deeper it's planted. Some very small seeds are just scattered directly on the soil and not covered up at all.
- ④ Water gently. Either set the container in 1 to 2 inches of warm water and allow the water to wick up to the soil surface, water gently from above with a spray bottle, or dribble water from your hand.
- ⑤ Slip the container into a clear plastic bag to minimize drafts and conserve moisture. Twist the end shut.
- ⑥ Put the seeds in a spot with the correct temperature. (Check the seed packet.) Keep the seeds out of direct sunlight or risk fatally overheating them. The top of the refrigerator is a nice warm spot.
- ⑦ Check the seeds daily. If water drops form inside the bag, open the end to vent it. Once the seeds germinate, remove the plastic and put the seedlings in the brightest indoor spot possible.
- ⑧ Put the new seedlings in a sunny, unobstructed south-facing window. Or set them a few inches below a shop light equipped with one warm and one cool fluorescent light. Use an inexpensive light timer to automatically keep the lights on 14 to 16 hours a day.

Herb Resources

Culinary Herb Guide: <http://culinaryherbguide.com/typesofherbs.htm>
Garden Web Herb Forum: <http://forums.gardenweb.com/forums/herbs/>
Backyard Gardener – Herb Info: <http://www.backyardgardener.com/herb/index.html>
About.Com – Gardening: go to link and then click on the Vegetable and Fruits Tab to get to Herbs
<http://gardening.about.com/>
Growing Herbs in the Home Garden – West Virginia Extension Office:
<http://www.wvu.edu/~agexten/hortcult/herbs/ne208hrb.htm>
Herb Scent Candles: <http://www.heathers-store.com/index.html>
Pamela Perkins – 630-441-0094 – pam.perkins55@gmail.com

CLASS ONE (CONT)

MAIN ACTIVITY (40 min): Designing an Herb Garden

Procedure

Look through herb cards, seed packets and pictures to pick out herbs to grow.

Reminisce and share stories about gardening experiences and use of herbs.

As plants are selected, share different herbal fragrances through lotions, herbal oils, gently rubbing plant leaves and burning herbal candles. Let participants put lotions on their hands if they desire.

Have participants decide on which herbs they would like to grow in their container herb garden.

Use sharpie pens to write onto Popsicle sticks or plant markers the name of the herbs to plant. Write name on one stick to identify plants later.

Limit participants to 6 – 8 different types of herbs.

When finished marking their sticks, rubber band them together with the name stick for use at the next class.

CLASS ONE (CONT)

Suggestions for Interactions

Ask participants if they have ever grown herbs before, and how they used them. Many participants enjoy sharing stories about their own gardens and gardening methods.

Key Questions

What herbs would you like to grow this year?

Do you have any favorite herbs?

What did you do with these herbs?

What will you do with the herbs we will grow?

Do you like to cook with herbs? Smell them? Touch them?

CLASS ONE (CONT)

SNACK (20 min):

Herb Spread and Bagels

REFER TO: HANDOUT PAGE #14 FOR RECIPE

Preparation and Set Up

Set out all the ingredients on the table(s),

Place utensils and the bowls to be shared between two participants

Set out the cream cheese several hours in advance so that has softened for easy mixing with the herbs.

Procedure

Demonstrate preparation of herbs, then assist the participants to put on gloves and complete these steps.

Strip the herb leaves off the stems and cut them into very small pieces with the scissors.

Measure and mix 1/4 cup of herbs with 8 oz. of cream cheese (more or less to taste). Use a single flavor of herb or mixtures.

Serve the bagels fresh or toasted.

Spread the mixture onto the bagels and let everyone try the different flavors served.

Herb Cream Cheese



Ingredients:

- 24 oz Cream Cheese at room temperature
- OR
- 2 lbs Soft Spread Margarine/Softened butter
- 2 doz Mini-bagels – pre-sliced
- ¾ cup Chopped fresh herbs ¼ cup for each 8 oz of cream cheese or to your taste.
Herbs to try: orange mint, thyme, lavender, chives, lemon verbena, lemon thyme, rosemary, oregano, dill and others

Directions:

1. Strip the herb leaves off the stems and cut them into very small pieces with scissors.
2. Measure and mix ¼ cup of herbs with 8 oz. of cream cheese (more or less to taste) or margarine. Use a single flavor of herb or mixtures.
3. Serve the bagels fresh or toasted.
4. Spread the mixture onto the bagels and enjoy.
5. Be bold and try new taste treats!

Cheese & Chive Biscuits



Ingredients: Makes 2 dozen

- 2 cups All purpose flour
- 1 Tbsp Baking Powder
- 1 tsp Salt
- ¼ cup Vegetable Shortening
- ¾ cup Sharp Cheddar Cheese, grated (or try other sharp cheeses)
- ¼ cup Fresh chives – chopped
- 1 cup Milk
- +
- 2 Tbsp Butter – melted (1/4 stick)

Directions:

1. Mix the flour, baking powder, and salt with a fork.
2. Use a pastry cutter to cut in the shortening until the mixture resembles coarse crumbs.
3. Stir in the grated cheese and chives.
4. Add the milk and stir just until the mixture forms a soft dough that pulls away from the side of the bowl.
5. Dough should be moist but not runny
6. Drop a heaping tablespoon of dough onto an ungreased cookie sheet.
7. Brush the tops with melted butter and bake for 12 to 15 minutes until golden brown.

CLASS ONE (CONT)

Special Considerations

Provide plastic gloves for the participants for sanitation.

Suggestions for Interactions

Have the participants discuss if they have grown these herbs in their gardens before or used fresh herbs in other recipes or for fragrances.

Make this an intergenerational activity.

Key Questions

What other things do you like to eat on bagels?

Do you like the cream cheese better plain or with herbs?

Which mixture is your favorite?

What should we do with the leftovers?

CLASS ONE (CONT)

Horizontal Programming

Use different types of herbs.
Make fruit and herb spreads.
Serve on biscuits.

Vertical Programming

Downward Extension

Have the ingredients and tools waiting for the participants to simply mix.

Have participants strip the herb leaves from the stems but not cut-up.

Upward Extension

Participants can assist in harvesting the herbs from the garden.

Participants can assist others with mixing.

Participants can serve the bagels.

HT Intervention Fun With Herbs Curriculum

The importance of a structured curriculum....

- Easily repeatable
- The HT intervention is consistent, lending itself to more reliable research
- One way of operationally defining an HT program/intervention

Description of Study

Participants

Participants were recruited from two age-restricted residences.

- One-third of participants came from subsidized housing in Carol Stream, Illinois
- Two-thirds of participants came from a low-income independent living community in Wake Forest, North Carolina

FUN WITH HERBS CLASS

CROSSINGS AT HERITAGE
3134 BRANCH FERRY COURT - WAKE FOREST



IN THIS CLASS YOU WILL:

- LEARN ABOUT GROWING AND USING HERBS
- DESIGN AND PLANT YOUR OWN WINDOWSILL HERB GARDEN
- USE HERBS IN COOKING AND CRAFTS
- LEARN AND SHARE IN A FUN GROUP SETTING



Description of Study

Participants

Interested parties were invited to an introductory meeting where the class was described and the research study explained.

Informed consent was obtained and demographic data was collected

Initial measures were administered

In the North Carolina meeting the groups were also assigned determining Group 1 and the Waitlist Group

Description of Study

Participants

Total n=31

Group IL (13), Group NC1 (7)

Group NC2 (7+4) Waitlist Control (n=7)

Ages ranged from 57-87 (average 72)

Gender: 30 female, 1 male

Ethnicity: Caucasian 77%, African Amer. 16%,
Native Amer. 7%

MMSE Scores: 30 – 22 (average 28)

Description of Study

Measures

Written Informed Consent

Mini Mental State Exam (MMSE) – cognitive functioning

Demographic Information Sheet

What Did I Learn? Results

Demographics

- Three Treatment Groups
- One Waitlist Control Group
- Can the three groups be combined to increase power?

Four Aspects of Quality of Life Were Measured

- Well-Being
- Self-Esteem
- Self Efficacy
- Social Connectedness

Measures Used

Well-Being Measure

WHO (Five) Well-Being Index

Self-Esteem Measure

Rosenberg Self-Esteem Scale

Self-Efficacy Measure

Gardening Questionnaire

Social Connectedness

The Friendship Scale

Hypothesis 1 predicted that upon completion of the HT Program, post-test scores would be significantly higher than pre-test scores for participants' *well-being* (as measured by the WHO-5) compared to the wait list control group.

Table 4
Mean Scores of Treatment Group and Waitlist Group on Pre-Test and Post-Test Measures of Well-Being

	Treatment Group (n=27)		Waitlist Group (n=7)	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Total Well-Being Score Time 1	18.11	4.25	16.57	5.32
Total Well-Being Score Time 2	18.33	3.23	16.29	5.71

Hypothesis 2 predicted that upon completion of the HT Program, post-test scores would be significantly higher than pre-test scores for participants' *self-esteem* (as measured by the Rosenberg's Self-Esteem Scale) compared to the wait list control group.

Table 5
Mean Scores of Treatment Group and Waitlist Group on Pre-Test and Post-Test Measures of Self-Esteem

	Treatment Group (n=27)		Waitlist Group (n=7)	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Total Self-Esteem Score Time 1	22.31	3.91	21.71	3.64
Total Self-Esteem Score Time 2	23.23	3.88	19.57	2.30

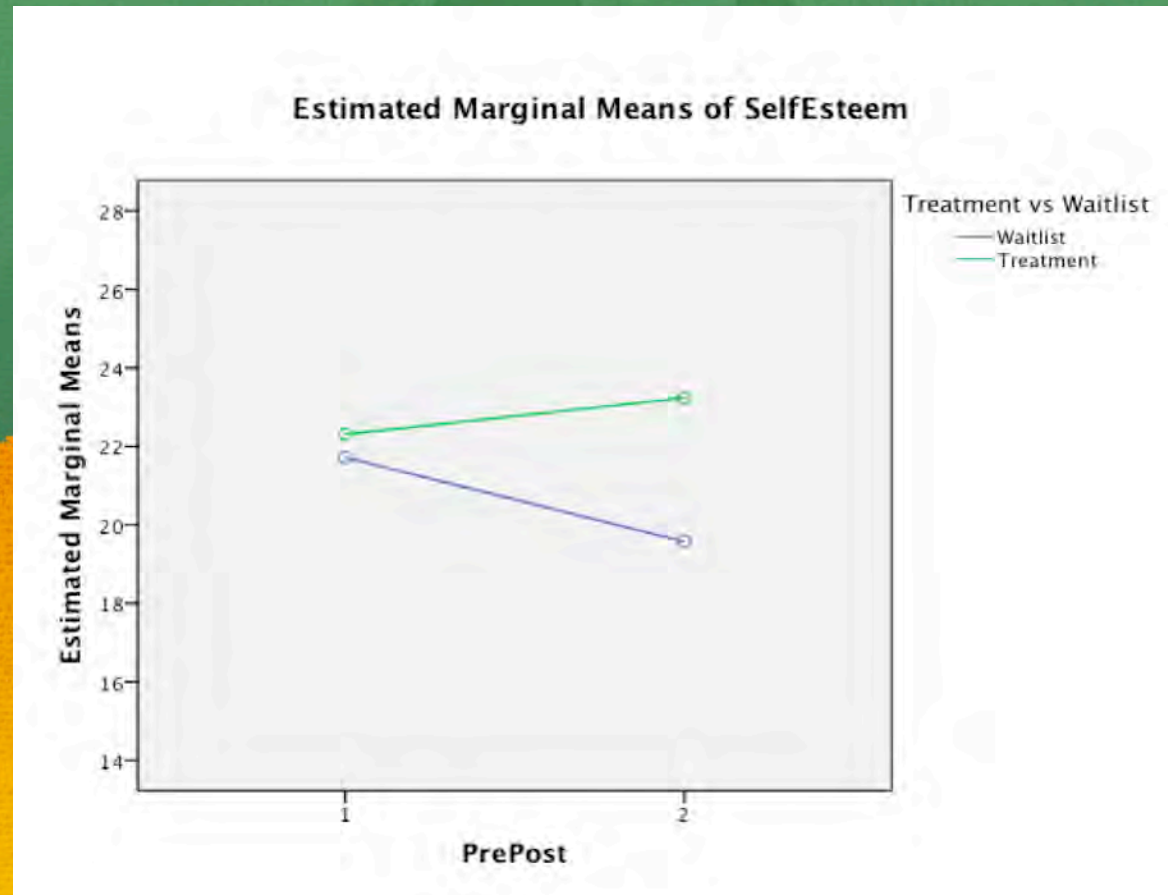


Figure 1. Changes in self-esteem before and after a HT intervention, comparing the treatment group with the waitlist control group.

Hypothesis 3 predicted that upon completion of the HT Program, post-test scores would be significantly higher than pre-test scores for participants' *self efficacy* (as measured by a Gardening Experience questionnaire) compared to the wait list control group.

Table 6
Mean Scores of Treatment Group and Waitlist Group on Pre-Test and Post-Test Measures of Garden Knowledge

	Treatment Group (n=27)		Waitlist Group (n=7)	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Total Garden Knowledge Score Time 1	7.19	2.25	7.86	1.57
Total Garden Knowledge Score Time 2	10.48	3.39	8.29	1.60

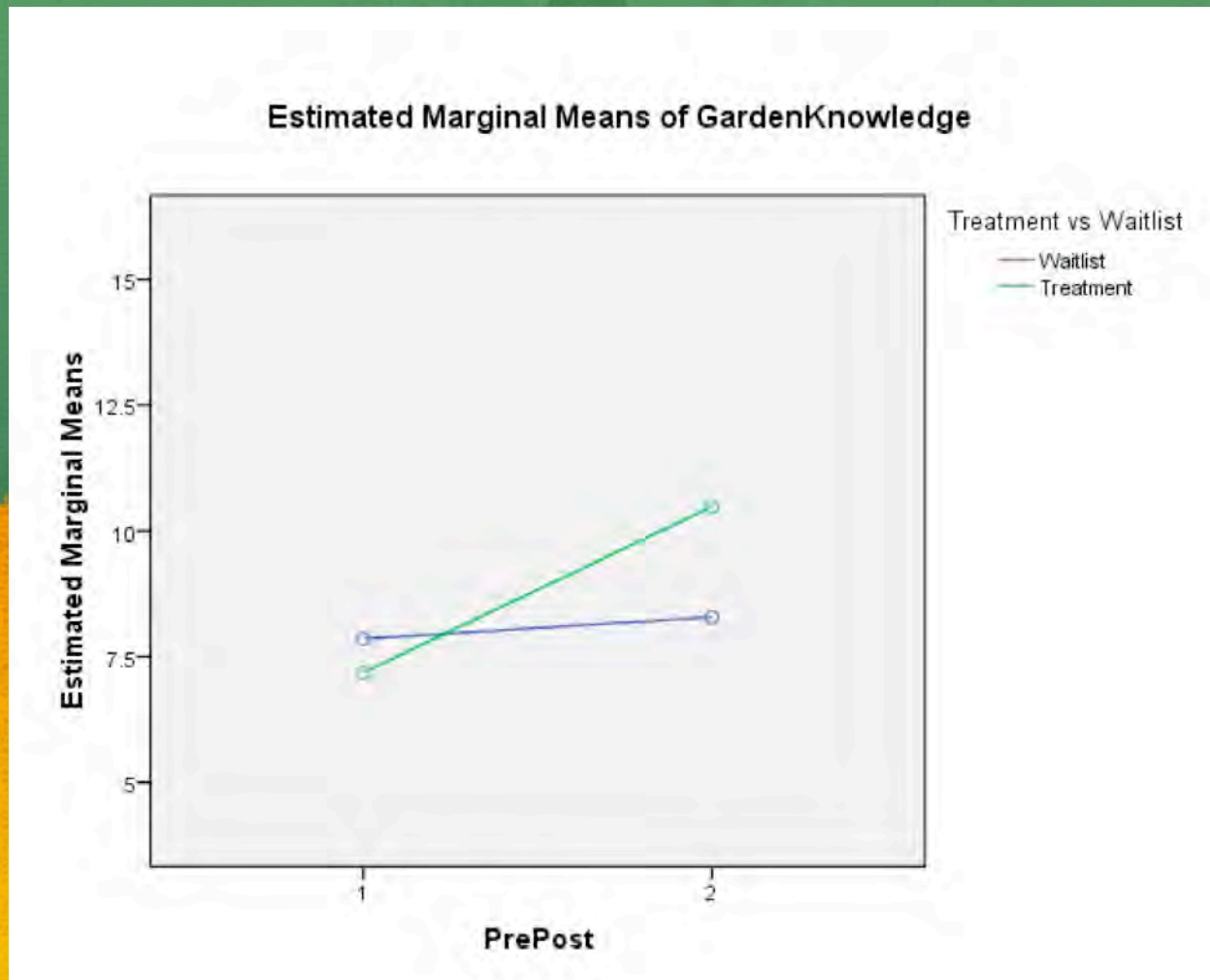


Figure 2. Changes in Garden Knowledge before and after a HT intervention, comparing the treatment group with the waitlist control group.

Table 6
 Mean Scores of Treatment Group and Waitlist Group on Pre-Test and Post-Test Measures of Garden Experience

	Treatment Group (n=27)		Waitlist Group (n=7)	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Total Garden Experience Score Time 1	12.33	4.12	12.14	2.80
Total Garden Experience Score Time 2	14.07	4.48	11.86	2.73

Hypothesis 4 predicted that upon completion of the HT Program, post-test scores would be significantly higher than pre-test scores for participants' sense of *social interaction* (as measured by the Friendship Scale) compared to the wait list control group.

Table 7
Mean Scores of Treatment Group and Waitlist Group on Pre-Test and Post-Test Measures of Social Connectedness.

	Treatment Group (n=27)		Waitlist Group (n=7)	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Total Social Connectedness Score Time 1	20.07	3.45	19.00	3.32
Total Social Connectedness Score Time 2	19.63	3.44	19.43	2.15

Qualitative Data

- To obtain feedback for future classes
- To gather concrete qualitative data to reflect participants' subjective experience
- Collected from Exit Surveys (n=19)

Qualitative Data

Categories of information

- What was the most helpful part of the class?
- What would you have done differently?
- Have you continued growing and/or using the herbs you planted?
- Any other comments?

Qualitative Data

Categories of information

- Most helpful part of the class was:
 - Learning about herbs and their uses (n=10)
 - Growing and using herbs (n=7)
 - Participating in the class (social aspect) (n=8)

Qualitative Data

Categories of information

- What would you have done differently:
 - Nothing (n=9)
 - Make the class longer (n=3)
- Of 19 respondents
 - 16 reported continuing to grow & use herbs
 - 3 are no longer growing or using their herbs

Discussion

A Pilot Study - Intervention

- Affordable (\approx \$20/person)
- Safe
- Easily Duplicated
- Facilitator – only needs a rudimentary knowledge of gardening
- Great for Older Adults
- Structured curriculum

Discussion

Self-Esteem: a person's overall evaluation of appraisal of his/her own worth.

The study found a significant increase of self-esteem from Time 1 to Time 2 in the treatment group as compared to the waitlist control group.

The quantitative findings from Rosenberg's Self-Esteem Scale support previous empirical and anecdotal evidence that says HT positively affects self-esteem.

Discussion

Self-Efficacy: a person's sense of belief that one's actions have an effect on the environment.

The study found a significant increase of self-efficacy from Time 1 to Time 2 in the treatment group as compared to the waitlist control group.

The quantitative findings from The Garden Experience Questionnaire support previous empirical and anecdotal evidence that says HT positively affects self-efficacy.

Discussion

No significant increases in psychological well-being.

Why?

Feelings of well being can be affected by many factors.

Physical illness is a major consideration for the elderly and their subjective well being.

Small sample size – even minor changes in physical health could be enough to change the outcome measures.

Discussion

No significant increases in garden experience.

Why?

Maybe participants realized how much more they could experience and rated themselves lower after the class.

Confusion on the Likert rating scale – quantitative data does not match the qualitative data in the exit survey and participants' own statements about the class.

Possibly they did not consider the class experience and were only considering outside gardening experience.

Discussion

No significant increases in social connectedness.

Why?

Because this study was with community dwelling older adults, it is likely that those who participated were the ones already active and participating in social events.

A different result may be gained with a more “captive” group of older adults such as those in assisted living and nursing homes.

Discussion

Other considerations on lack of significance.

Small number of participants

Relatively short duration of the class (6 weeks)

Participants remained fairly stable during this time on attitudes of well-being and social connectedness.

Feedback on the Class

From the Exit Surveys:

“I learned about herbs of which I was totally ignorant. I grew up in a big city and gardening was not a part of my life.”

“The most helpful was the hands on experience of using the herbs and getting to taste, touch and feel.”

“Doing the activity with all the others in the class and enjoying the friendship of others.”

“My herbs are growing abundantly and I am using some of them. Something I never did before. Thanks for introducing me to a variety of herbs.”

Limitations

Small sample size

Class format requires relatively small class sizes

New format of the curriculum

Homogeneous make up of participants

Were the best measures used?

Future Research

Additional research will add to the data of the current study thereby increasing power and offering statistical significance to the findings.

To facilitate research by other groups, the curriculum should be further structured for consistency across applications.

Future Research

Approach the qualitative information in a more systemized way.

Use this intervention with a variety of populations.

Conclusion

This study has:

Contributed to the body of HT research

Created and utilized a structured HT curriculum which can be duplicated

Meets the criteria of an intervention which is: effective, affordable, and easy to implement.

Thank you

The
End

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"I'm going to close my eyes and count to three. When I open them, ten of those candles better be gone."