AN ANALYSIS OF HORTICULTURAL THERAPY ACTIVITIES IN LICENSED NURSING HOMES

by

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1980

Approved by:

Richard H. Mattson

Major Professor

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This study is dedicated to my wife, Marie, for her devotion and encouragement when the task appeared so formidable and I became disenchanted and questioned my ability to finish it. To my children for understanding that some people have to climb mountains just because they are there; thank you for your loyalty and comprehension.

Most importantly, my humble appreciation to God, the Almighty Father, who made it all possible.

INTRODUCTION

Remember the foliage and flowering plants that your mother or grandmother grew on the windowsills and other areas about the house, and the joy and satisfaction she derived in caring for them? Remember the many "slips" she made and the seed she so painstakingly collected to share with her friends and neighbors? Do you recall your father or grandfather planting and caring for the family vegetable garden and the glow of satisfaction they manifested in harvesting the "first" tomato of the season? Gardening demonstrated visible and concrete proof that the family was capable of providing for it's nutritional needs.

Gardening activities within nursing homes provide the residents an opportunity to continue those links with the past that proved so self-satisfying and rewarding; for those individuals who have had only a brief encounter or no encounter at all with horticulture, participation in gardening provides an introduction into this ancient activity with it's many psychological or physiological therapeutic benefits.

Many people enjoy working with plants and the soil, from the child's first experience in the sandbox to the mature individual working in a garden plot. The real number and percentage of the population of older people will continue to increase as people live longer and the birth rate decreases.

Leisure time activities, such as gardening can be expected to increase in popularity for older people living in nursing centers or in their own homes. In 1979, the Gallup Poll indicated that 43% of American households had vegetable gardens The percentage of Americans participating in indoor, patio, or other forms of gardening is even higher.

Historically, horticulture has not been considered an important therapeutic component of nursing home activity programs; with the development of horticultural therapy this condition is changing rapidly within skilled nursing centers. This thesis examined the present conditions of nursing home residents, the staff available for their care and the components of horticultural activities.

The results of this research are written in manuscript style for publication in HortScience, a publication of the American Society for Horticultural Science.

MANUSCRIPT

AN ANALYSIS OF HORTICULTURAL THERAPY ACTIVITIES IN LICENSED NURSING HOMES[1]

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Abstract. A survey of 188 licensed nursing home administrators indicated that the primary benefits of horticultural therapy activities to residents were improved self-esteem (41%), physical conditioning (39%), nutrition (15%), and income (5%). Nursing homes of more than 100 beds had significantly higher resident:therapist ratios (44:1) than smaller nursing homes (32:1). Twelve percent of residents were allowed to participate unassisted in gardening activities, 52% of which were conducted indoors. Forty-six percent of all plant materials were recycled from funeral homes. The primary factors preventing horticultural therapy activities

[1]Received for publication June 16, 1980. The cost of publishing this paper was defrayed in part by the payment of page charges. Under postal regulations, this paper must therefore be hereby marked advertisement solely to indicate this fact.

[2]Graduate student in Horticultural Therapy and Professor of Horticulture.

were lack of resident interest (41%), inadequate funding (39%), and insufficient land (20%).

Horticultural activities provide nursing home residents living plants that require continual care, encourage social interaction, and maintain self-esteem (2). Sites of activities may be wheelchair-height raised beds, window boxes, indoor light gardens, or portable gardens for bedfast patients (1,3). Although positive benefits of gardening are known, the potential of horticultural therapy programs has not been evaluated extensively.

Licensed nursing home administrators provided us with information to analyze (1) demographics on residents, (2) staffing ratios and salary ranges in small, medium, and large nursing homes, and (3) horticultural therapy activities available.

A questionnaire for nursing home administrators relevant to residents, staffing, and activity programs was prepared and field tested. A revised questionnaire, consisting of 31 questions, a letter of explanation, a horticultural therapy brochure, and a self-addressed return envelope were mailed to 188 randomly selected administrators. An equal number of nursing homes was surveyed with (1) 55 beds or fewer (mainly rural), (2) 56-100 beds (metropolitan, urban, and rural), and (3) more than 100 beds (chiefly metropolitan). Forty-seven percent of the questionnaires were returned within 24 days. Eighty-four respondents were analyzed by the SAS 76 General

Linear Model (GLM) program.

Resident characteristics: Female residents outnumbered male residents approximately 3:1; 53% of the male residents had an agricultural background while 71% of the females were former homemakers (Table 1). Fifty-eight percent of the residents were partially ambulatory or bedfast; 42% were ambulatory. Cardiovascular disabilities afflicted 43% of the residents and 33% were classified as confused or disoriented.

Professional staffing: As shown in Table 2, ratios of administrators and activity staff were between 5 to 10 times larger than the ratios of residents to medical, supportive, or volunteer help. Ratios of residents to administrative and activity therapists were significantly higher in nursing homes with more than 100 beds; other staff-to-resident ratios were not influenced by size of nursing homes.

The resident-to-activity-staff ratios indicate short activity staff time allotted per resident which contrasts with more favorable ratios of other professional or volunteer help.

Service and church affiliated groups provided 70% of the volunteer groups participating in nursing home activities. Direct line budgeting (50%) was the primary funding source for activities. Sales of craft-produced articles (25%) and private donations (25%) accounted for the remainder of the activities budget. Administrators (71%) reported that activities budgets were adequate.

Twenty-three percent of the activity therapists were salaried with a range of $7-9,000 per annum; 77% were paid hourly wages with 54% receiving more than the minimum hourly wage rate; only 19% received more than $5 an hour.

Sixty-five percent of the homes schedule 5 to 15 activity periods per week with 84% reporting more than 50% resident participation. Eighty-two percent allocated $10 to $50 per resident per year to support activities programs.

Horticultural analysis: As indicated in Table 3, nearly one-fourth (23%) of the horticultural activities in nursing homes are completed by professional staff only. Almost two-thirds of the homes permitted some resident participation in horticultural activities; 12% permitted residents to handle all plant maintenance.

Forty-six percent of nursing homes depended on funeral homes to supply plant and flower needs. Activities budgets provided more than one-third (38%) of horticultural materials used; garden clubs and other civic groups contributed the remainder. In 67% of the homes, horticulture was a scheduled activity. Plants were located in four areas: residents' rooms, 29%; entrances, 28%; outdoors, 28%; and dining rooms, 15%.

Indoor horticultural activities were slightly more popular (52%) than outdoor activities (46%). Only 2% of the nursing homes provided activities in greenhouses.

The potential benefits of horticultural programs to residents were primarily psychological and physiological (Table 4);

80% of the administrators surveyed indicated that improvement of self-esteem and physical condition were the chief rewards to residents participating in horticultural activities. Improved nutrition (15%) or income (5%) were also perceived benefits.

Administrators were twice as dependent (65%) on their respective staff and local nursery or greenhouse personnel for information to augment their horticultural programs as they were on the extension service and local garden/civic organizations.

Lack of resident interest (41%) and limited funding (39%) were cited by 80% of the administrators as the main difficulties in establishing horticultural programs. Insufficient land for garden areas was given as a deterring factor by 20%.

In conclusion, most licensed nursing home administrators are aware of resident benefits and allow residents to participate in horticultural activities. However, levels of staff and financial support to implement or expand horticultural therapy programs are limited.

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Table 1. Classification of nursing home residents.

1. Disabilities	%
Cardiovascular	43.1
Confused/disoriented	33.3
Skeletal/muscular	13.7
Other disabilities	9.9
2. Mobility	
Partially ambulatory	44.2
Ambulatory	41.9
Bedfast	13.9
3. Male occupations	
Agricultural	52.9
Industrial	24.2
Professional	10.9
Other professions	12.0
4. Female occupations	
Homemaker	71.4
Semi-professional	12.9
Professional	9.6
Other	6.1

Table 2. Resident-to-staff ratios in three sizes of nursing homes.

Facility size (bed no.)	Staff classification				
	Adminis-trators	Medical staff	Activity staff	Support staff	Volunteer staff
> 100	40:1 a[z]	3:1 a	44:1 a	7:1 a	8:1 a
56 - 100	32:1 b	4:1 a	32:1 b	7:1 a	4:1 a
< 56	25:1 b	3:1 a	30:1 b	7:1 a	8:1 a

[z] Mean separation within columns by Duncan's New Multiple Range Test, 5% level.

Table 3. Characteristics of nursing home horticultural activities.

1. Participation level of residents	%
Staff complete all activities	23.3
Staff allow some resident help	47.6
Staff allow substantial resident help	16.8
Residents complete most of activities	12.3
2. Sources of plants and flowers	
Funeral homes/donated	46.4
Activities budget/purchased	38.6
Civic groups/donated	15.0
3. Sources of horticultural information	
Local horticultural industry	32.9
Nursing home staff	31.9
County extension agents	18.1
Garden clubs and civic organizations	17.1
4. Location of plants in nursing homes	
Residents' rooms	28.6
Entrances	28.1
Outdoors	28.1
Dining rooms	15.2
5. Location where activities are completed	
Indoors	51.8
Outdoors	46.4
Greenhouses	1.8

Table 4. Anticipated benefits and problems in establishing horticultural programs.

1. Benefits	%
Improve self-esteem	41.5
Improve physical conditioning	39.0
Improve nutrition	14.7
Source of income	4.8
2. Problems	
Lack of resident interest	40.8
Limited budget	38.8
Insufficient land	20.4

APPENDIX

KSU
ANSAS
TATE
IVERSITY

Department of Horticulture

Waters Hall
Manhattan, Kansas 66506
913-532-6170

April 24, 1979

Dear administrator:

The enclosed research questionnaire will evaluate the acceptance of and demand for horticultural therapy programs in nursing homes. I am attempting to determine if a relationship exists between the past experiences of elderly people and their interest in continuing gardening activities. Your completion of this questionnaire will aid in examining this relationship.

This questionnaire is being conducted under guidelines established by Kansas State University. By cooperating you will help provide answers to important questions; however, your participation is strictly voluntary. You should omit any questions which you feel unduly invade your privacy or which are otherwise offensive to you. Confidentiality is guaranteed; your name will not be associated with your answers in any public or private report of the results.

The data formulated from this questionnaire are to be used as an integral part of a manuscript being submitted in partial fulfillment for a Master of Science thesis. Your help and time in completing and returning this questionnaire will be genuinely appreciated.

Sincerely yours,

William P. McAndrew,
Horticultural Therapy, GTA

WPM/cg

Enclosures

Code No. _____ Date Completed: _____

1. What types of care do you provide? (Check all that apply)

   1. ( ) Skilled nursing home
   2. ( ) Intermediate care facility
   3. ( ) Extended care facility
   4. ( ) Retirement community or geriatric center
   5. ( ) Other, specify _____

2. Indicate the number of staff and volunteer help:
   1. Administrative ____
   2. Nursing and medical personnel ____
   3. Activity staff ____
   4. Other paid supportive staff ____
   5. Volunteers ____

3. How many residents do you have?

   1. Male ____
   2. Female ____

4. Size of facility

   1. Total number of beds ____
   2. Percentage occupancy during past 6 months ____

5. Occupational background of residents: (Indicate number in each category)

Men

   1. Agriculture (farmers, ranchers, agribusiness) ____
   2. White collar (doctors, lawyers, educators, etc) ____
   3. Blue collar (construction, factory, etc) ____
   4. Other, specify _____ ____

Women

   1. Homemakers ____
   2. Professional (nurses, teachers, etc) ____
   3. Semi-professional (clerks, waitresses, etc) ____
   4. Other, specify _____ ____

6. Ethnic origin: (Indicate number in each category)

   1. Black ____
   2. White ____
   3. Asian ____
   4. Other ____

7. Types of mobility: (Indicate number in each category)

   1. Ambulatory, independent functioning ____
   2. Partially ambulatory, in wheelchairs, using ambulators or cane ____
   3. Bed-ridden, total care required ____

8. How would you categorize residents? (Indicate percentage)

   1. Active ____
   2. Passive ____
   3. Disoriented, inactive ____

9. Types of physical or emotional disabilities (Indicate percent of occupancy)

   1. Cardiovascular disorders ____
   2. Skeletal-muscular disability ____
   3. Confused, emotionally disturbed ____
   4. Speech disorder, sensory deprivation ____
   5. Other disabilities, specify _____ ____

IF THE ANSWER TO QUESTION NO. 10 IS YES, PLEASE ANSWER QUESTIONS 11 to 20, OTHERWISE SKIP TO QUESTION NO. 21.

10. Do you have a scheduled activity program for your residents?

    1. ( ) Yes 2. ( ) No

11. How many activities are conducted per week?

    1. ( ) 1 to 5 2. ( ) 5 to 10
    3. ( ) 11 to 15 4. ( ) 16 to 20
    5. ( ) more than 20

12. How many residents participate in activities regularly?

    1. ( ) less than 25%
    2. ( ) 25 to 50%
    3. ( ) more than 50%

13. How much is spent per participant for activities annually?

    1. ( ) less than $10
    2. ( ) between $10 and $50
    3. ( ) more than $50

14. What is your primary source of funding for activities? (Check all that apply)

    1. ( ) sales 2. ( ) direct line item budgeting
    3. ( ) private donations
    4. ( ) other sources, specify _____

15. How would you describe your present activities budget?

1. ( ) adequate
2. ( ) insufficient
3. ( ) too much

16. What outside groups participate in your activities program? (Check all that apply)

1. ( ) service groups
2. ( ) church groups
3. ( ) garden groups
4. ( ) other groups, specify _____

17. Where do you or your staff obtain new ideas for activities? (Please rank using No. 1 as most important to No. 4 as least important)

1. ( ) staff training sessions
2. ( ) magazines and books
3. ( ) residents are encouraged to contribute ideas for activities
4. ( ) other sources, specify _____

18. Which activities would you consider most popular for men? (Rank from 1 to 4)

1. ( ) playing cards
2. ( ) bingo
3. ( ) cooking
4. ( ) eating
5. ( ) gardening
6. ( ) reading
7. ( ) discussion
8. ( ) passive watching, T.V., etc.
9. ( ) other, specify _____

19. Which activities would you consider most popular for women? (Rank from 1 to 4)

1. ( ) playing cards
2. ( ) bingo
3. ( ) cooking
4. ( ) eating
5. ( ) gardening
6. ( ) reading
7. ( ) discussion
8. ( ) passive watching, T.V., etc.
9. ( ) other, specify _____

20. Is your activity director?

1. ( ) salaried
2. ( ) paid on an hourly wage

If salaried, is the annual salary?

1. ( ) less than $7,000
2. ( ) $7,000 - $9,000
3. ( ) more than $9,000

If paid by the hour, is the hourly wage?

1. ( ) minimum wage
2. ( ) above minimum wage, but less than $5/hour
3. ( ) over $5/hour

21. Which of the following factors prevent you from having a regular activities program for your residents? (Check all that apply)

1. ( ) insufficient funds
2. ( ) inadequately trained staff
3. ( ) lack of facilities
4. ( ) residents lack interest or ability
5. ( ) other reasons, specify _____

22. Does your institution have a gardening program?

1. ( ) Yes, regularly scheduled
2. ( ) Yes, occasionally scheduled
3. ( ) No

23. Who does the horticultural work (lawn care, landscaping, maintenance of plants and flowers) at your facility?

1. ( ) All is done by professional staff
2. ( ) Some gardening is encouraged and done by residents, but most is done by professional staff
3. ( ) The majority is done by professional staff, but residents make a substantial contribution
4. ( ) Most gardening is done by residents

24. Where do you obtain plants and flowers? (Check all that apply)

1. ( ) donations from funeral homes
2. ( ) provided by garden clubs
3. ( ) purchased from activities budget
4. ( ) donated by families
5. ( ) other sources, specify _____

25. Where are most plants and flowers found? (Check all that apply)

1. ( ) in residents' rooms
2. ( ) on dining room tables
3. ( ) in entrance and public areas
4. ( ) outdoors
5. ( ) other, specify _____

26. What kinds of horticultural experiences are provided? (Check all that apply)

1. ( ) indoor plant craft projects
2. ( ) greenhouse activities
3. ( ) indoor gardens for wheelchair residents
4. ( ) outdoor vegetable, flower, and fruit gardens
5. ( ) other, specify _____

27. Where do you get information about horticulture? (Check all that apply)

1. ( ) garden clubs
2. ( ) horticulture or county agent
3. ( ) people in the local greenhouse or nursery business
4. ( ) staff on the local grounds or landscape department at facility
5. ( ) other, specify _____

28. What do you believe would be the potential benefits of a horticultural therapy program at your facility? (Check all that apply)

1. ( ) a source of income through sales of plants and produce
2. ( ) improved nutrition, fresh vegetables, and fruits
3. ( ) physical exercise, fresh air, and sunshine
4. ( ) enhancement of self-esteem and reality orientation
5. ( ) other, specify _____

29. What are the actual benefits of any horticultural therapy activities in practice at your facility at the present time?

30. Which groups at your facility would be most interested in horticultural activities?

a. ( ) men
( ) women
( ) equal interest

b. 1. ( ) farmers and ranchers
2. ( ) bankers, lawyers, doctors
3. ( ) construction, factory workers
4. ( ) equal interest

c. 1. ( ) white
2. ( ) asian
3. ( ) black
4. ( ) equal interest

d. 1. ( ) homemakers
2. ( ) teachers, nurses, professionals
3. ( ) clerks, waitresses, semi-professionals
4. ( ) equal interest

31. What problems will (or have) occur(red) in starting a horticultural program?

1. ( ) limited budget
2. ( ) insufficient land and space for gardens
3. ( ) lack of interest by residents
4. ( ) inadequately trained staff
5. ( ) other activities have higher priority
6. ( ) other, specify _____

Table 1. Mean number of beds with percent occupancy by facility size.

Facility size (bed no.)	Mean number beds occupied	% occupancy
> 100	123.0	92.8
56 - 100	76.5	85.6
< 56	45.0	89.9

Table 2. Total number of respondents to survey by facility size.

Facility size (bed no.)	Respondents (no.)	Residents (no.)	Counties Represented (no.)
> 100	28	3444	17
56 - 100	25	1913	20
< 56	31	1395	24

Table 3. Classification of physical or emotional disability (percent of residents).

Facility size (bed no.)	Disability			
	Cardiovascular	Skeletal muscular	Confused Disoriented	Other
> 100	42.4 a[z]	17.0 a	32.5 a	8.1 a
56 - 100	43.9 a	10.7 a	32.7 a	12.7 a
< 56	43.0 a	13.5 a	34.7 a	8.8 a

[z]Mean separation within columns by Duncan's New Multiple Range Test, 5% level.

Table 4. Resident mobility (percent per facility).

Facility size (bed no.)	Degree of mobility		
	Ambulatory	Partially ambulatory	Bedfast
> 100	35.2 a[z]	50.6 a	14.2 a
56 - 100	47.3 b	37.5 b	15.2 a
< 56	43.3 b	44.5 b	12.2 a

[z]Mean separation within columns by Duncan's New Multiple Range Test, 5% level.

Table 5. Occupational background of male residents most interested in horticultural activities (percent within home population).

Facility size (bed no.)	Occupational background			
	Agricultural	Professional	Industrial	Other Occupations
> 100	40.7 a[z]	17.5 a	28.9 a	12.9 a
56 - 100	59.8 b	8.3 b	20.7 b	11.2 a
< 56	58.1 b	6.8 b	23.1 b	12.0 a

[z]Mean separation within columns by Duncan's New Multiple Range Test, 5% level.

Table 6. Occupational background of female residents most interested in horticultural activities (percent within home population).

Facility size (bed no.)	Occupational background			
	Homemaker	Professional	Semi-Professional	Other Occupations
> 100	67.5 a[z]	12.6 a	13.7 a	6.2 a
56 - 100	74.7 b	9.3 b	9.3 b	6.7 a
< 56	71.8 b	7.0 b	15.8 a	5.4 a

[z]Mean separation within columns by Duncan's New Multiple Range Test, 5% level.

Table 7. Percentage of horticultural maintenance work completed by staff or by residents in 3 sizes of nursing homes.

Facility size (bed no.)	Work completed by			
	Professional staff only	Staff with some resident help	Substantial resident help	Residents do most
> 100	9.1	59.1	18.2	13.6
56 - 100	38.1	38.1	4.8	19.0
< 56	22.7	45.5	27.3	4.5

Table 8. Sources supplying plant and flower materials to 3 sizes of nursing homes (percent by source).

Facility size (bed no.)	Source		
	Funeral homes	Activities budget	Civic groups
> 100	47.4	34.2	18.4
56 - 100	43.3	40.5	16.2
< 56	46.4	38.6	15.0

Table 9. Location of horticulture in licensed nursing homes (percent per location).

Facility size (bed no.)	Horticulture location			
	Residents' rooms	Entrances	Outdoors	Dining Areas
> 100	28.9	28.9	27.6	14.6
56 - 100	29.0	27.5	29.0	14.5
< 56	28.6	28.1	28.1	15.2

Table 10. Specific horticultural activities provided residents by percentage time allocated (percent for activity).

Facility size (bed no.)	Specific activity		
	Indoor	Outdoor	Greenhouse
> 100	46.7	53.3	0.0
56 - 100	63.8	33.4	2.8
< 56	51.8	46.4	1.8

Table 11. Benefits of horticultural activities to residents in 3 sizes of nursing homes (listed as percent of first choice).

Facility size (bed no.)	Perceived horticultural benefit			
	Improve self esteem	Improve physical condition	Improved nutrition	Income from sales
> 100	40.0	38.0	16.0	6.0
56 - 100	46.3	39.0	9.8	4.9
< 56	41.5	39.0	14.7	4.8

Table 12. Percentage of nursing homes listing first or primary source of horticultural information.

Facility size (bed no.)	Information source			
	Garden clubs civic org.	County extension agent	Local business personnel	Staff
> 100	21.9	15.6	28.1	34.4
56 - 100	19.4	25.0	30.6	25.0
< 56	10.0	13.8	40.0	36.2

Table 13. Primary source of ideas for activities (percent of first choice).

Facility size (bed no.)	Staff trng sessions	Magazines books	Residents suggestions	Other
> 100	44.4	22.9	10.5	22.2
56 - 100	52.6	21.1	10.5	15.8
< 56	24.5	40.8	20.9	13.8

Table 14. Problems anticipated by administrators in establishing a horticultural program in 3 sizes of nursing homes (percentage listed as first reason).

Facility size (bed no.)	Anticipated problem		
	Limited budget	Insufficient land	Lack resident interest
> 100	36.8	31.6	31.6
56 - 100	38.9	11.1	50.0
< 56	38.8	20.4	40.8

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WILLIAM PATRICK McANDREW

B.S., Kansas State University, 1977

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MASTER OF SCIENCE

Department of Horticulture

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1980

One hundred eighty eight (188) Kansas licensed nursing homes were surveyed to explicate residents, staffing, activities programs and horticultural therapy programs.

Interest in horticultural programs by nursing home residents is independent of the bed capacity of the facility. Men with farming or ranching backgrounds and women homemakers maintain a continuing interest in horticultural activities.

In Kansas nursing homes, horticulture is equally located in the entrances, residents' rooms and outdoor areas; horticulture may also be found in congregate dining areas.

The funeral home is the largest single source of plant material for the nursing home supplying 46% of the total utilized.

Eighty (80) percent of Kansas nursing home administrators listed horticulture as providing physiological and psychological benefits to residents. Horticultural activities enjoying the greatest success and acceptance by residents were indoor garden projects and outdoor flower or vegetable cultivation. Approximately two-thirds of the surveyed homes permitted some resident participation in horticultural activities.

Budget limitations or insufficient land areas restrict the implementation of horticultural activities in many of the homes. The administrators relied upon existing staff expertise and local professional personnel from greenhouse or nurseries to supplement the horticultural activities programs.