Activities, Adaptation & Aging
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/waaa20

A Horticultural Therapy Program for Individuals with Acquired Aphasia
Martha Taylor Sarno MA, MD (hon) a b & Nancy Chambers HTR c

a Clinical Rehabilitation Medicine, New York University School of Medicine
b Speech-Language Pathology Department, Rusk Institute of Rehabilitation Medicine, New York University Medical Center
c Enid A. Haupt Garden, Rusk Institute of Rehabilitation Medicine, New York University Medical Center
Published online: 30 Sep 2008.

To cite this article: Martha Taylor Sarno MA, MD (hon) & Nancy Chambers HTR (1997) A Horticultural Therapy Program for Individuals with Acquired Aphasia, Activities, Adaptation & Aging, 22:1-2, 81-91, DOI: 10.1300/J016v22n01_07
To link to this article: http://dx.doi.org/10.1300/J016v22n01_07

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the “Content”) contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with
A Horticultural Therapy Program for Individuals with Acquired Aphasia

Martha Taylor Sarno
Nancy Chambers

SUMMARY. A horticultural therapy program designed for individuals with acquired aphasia, a communication impairment characterized by difficulty in speaking and understanding speech, is described. Nineteen patients ranging in age from 49 to 90 years of age (mean 73.9) participated in the project. The program consisted of structured activities designed to provide a well-rounded introduction to plant care as a leisure time or avocational activity. More than half of the patients reported that they began to care for plants which were acquired in the project at home. Some participants became volunteers in the greenhouse. Those who participated were observed to increase their verbal behavior and social interaction, and their family members reported a noticeable increase in patient gratification. [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-342-9678. E-mail address: getinfo@haworth.com]

INTRODUCTION

A fundamental philosophical basis for horticultural therapy is the belief that contact with plants meets a basic human psychological need. It recog...
nizes that people created and used gardens, since early times, for both restorative and educational purposes. Horticultural therapy based on the "sharing of the experience of plants between the therapist and patient/client" (Relf, 1992) offers discrete benefits to individuals which can enhance and augment their rehabilitation. This paper details the objectives, implementation and results of a pilot horticultural therapy program organized for patients with aphasia at the Howard A. Rusk Institute of Rehabilitation Medicine.

THE NATURE OF APHASIA

Over one million individuals in the United States have acquired aphasia, a communication disorder which is characterized by difficulty in speaking and understanding speech (NIH, 1979). Aphasia is usually the result of a stroke, but head injuries and brain tumors are also causative. The majority of strokes occur in middle-aged and elderly individuals. In the United States, this population is predicted to reach 31 million people by the year 2000 and may reach 22 percent of the total population by the year 2030. The number of individuals with aphasia can thus be expected to increase significantly (Spencer, 1984).

Aphasia is the result of damage to speech and language centers in the dominant, usually the left, hemisphere of the brain. The brain injury is most commonly the result of a disturbance in the circulation of blood to the involved area due to a clot in or rupture of a key blood vessel.

In general, different types of aphasia correlate with different locations of cerebral lesions and may be classified according to their primary characteristics, especially those involving speech production. Aphasia can be so mild that the symptoms are barely perceptible or so severe that the person is unable to speak, write or read effectively. The two most common categories of aphasia are fluent aphasia and nonfluent aphasia.

Patients with nonfluent aphasia may have limited vocabulary; slow, hesitant and effortful speech; awkward articulation; and a restricted use of grammar. Speech comprehension is generally normal or near normal. Patients with nonfluent aphasia tend to express themselves in vocabulary that is restricted to nouns, verbs, adjectives and adverbs. Prepositions, articles, and conjunctions (the little words which provide the grammar of the language) are generally lacking. Individuals with nonfluent aphasia tend to be aware of their communication deficiencies and usually have impaired motor function of the right arm and leg (i.e., right hemiplegia or paresis).

Patients with fluent aphasia generally have easily articulated speech produced at a normal rate, with preserved melody. They tend to have the
greatest difficulty in retrieving nouns and verbs. They may also have a limited awareness of their difficulty in communication. They generally do not have physically disabilities, since their lesions are usually located in the posterior portion of the brain distant from motor areas. Fluent aphasia is also characterized by impaired auditory comprehension. When fluent aphasia is severe, word and sound substitutions may be of such magnitude and frequency that speech may be rendered meaningless.

When aphasia is severe and there is marked dysfunction in all language modalities (speaking, understanding speech, reading, and writing), it is referred to as global aphasia. Global aphasia is not a type of aphasia but a designation of severity.

If a patient is fortunate enough to fully recover from aphasia, it generally occurs within hours or days following onset. When aphasia persists for several weeks or months, individuals rarely return to their previous level of communication effectiveness. The abrupt onset of aphasia initiates a series of reactions that may have an impact on every aspect of daily life. The ability to cope with being socially different, feelings of loss, lowered self esteem and possible changes in vocational status may pose serious, seemingly insurmountable, problems to the individual with aphasia. Personal accounts of aphasia make it clear that an individual’s identity may change after the onset of aphasia. Roles and responsibilities in the family may no longer apply. Not only may role changes bring about a “loss of self,” but the family is also strained as the aphasic person, who may once have controlled the family’s social and financial life, must give up these roles (Sarno, 1993).

**SPEECH/LANGUAGE REHABILITATION**

Speech therapy provided by speech-language pathologists is the basis for most of the language rehabilitation offered to individuals with aphasia. These services are usually rendered in rehabilitation centers, and in hospitals by speech-language pathologists in private practice. In large, comprehensive treatment centers, aphasia rehabilitation is offered through both individual and group therapy.

Two of the most difficult aspects of managing patients with aphasia are its chronic nature and long, arduous recovery process. The recovery timetable is variable, but a gradual improvement usually takes place over many months. For a substantial number of patients, the process takes several years.

Speech therapy addresses the communication problems caused by aphasia and includes educating the patient and family about the nature of
the condition. Therapy also focuses on Aphasia’s significant psychosocial impact on the individual and family. Social isolation is one of the most common consequences of aphasia, and a substantial depression may be the most important reaction for many. Communication is an essential human behavior that, if impaired, may result in frustration, decreased self-esteem, and a decreased sense of personhood (Sarno, 1986, 1993).

THE HOWARD A. RUSK INSTITUTE OF REHABILITATION MEDICINE

The Howard A. Rusk Institute of Rehabilitation Medicine is the clinical facility of the Department of Rehabilitation Medicine of the New York University School of Medicine. It was the first university-related rehabilitation hospital in the country and is the world’s largest university affiliated center for the treatment of disabled adults and children. Founded by Dr. Rusk in 1947, the Institute has a long history of providing comprehensive and innovative rehabilitation to individuals with a wide range of physical disabilities. On average, 1000 inpatients and 8500 outpatients, both children and adults, are treated annually.

THE RUSK INSTITUTE GLASS GARDEN

Among the unique features of the Rusk Institute is the Glass Garden built in 1958 with a generous gift from Mrs. Enid A. Haupt. It is a 1700-square foot conservatory and the centerpiece of a 12,000-square foot greenspace consisting of an outdoor perennial garden, a children’s “play-garden,” and indoor displays which include orchids, palms, bromeliads and other tropical plants adaptable to New York offices and apartments. It also includes an aquatic garden with fish, turtles and a medley of tropical birds. The Glass Garden was the first facility of its kind designed to be totally accessible to people in wheelchairs. It serves as a model for organizations designing similar facilities across the country and hosts more than 100,000 visitors annually.

The Glass Garden serves the important restorative function of providing patients, their visitors, and hospital staff a place to escape the rigors of clinical life. The garden is also a setting in which patients, both old and young, work with trained horticultural therapists on activities designed to improve physical and cognitive functioning and achieve a sense of personal accomplishment, productivity and independence. Over 3000 horticultural therapy sessions are rendered annually.
Patients, referred by their occupational therapists, attend daily, hour-long sessions in the garden in intergenerational groups. They propagate seeds and cuttings, arrange flowers, make cactus gardens and terrariums, and also work on various horticultural craft projects. All patients have their own bench space in the greenhouse, and they take their plants home upon discharge. The horticultural activities are designed to meet the patients' treatment goals in both functional and cognitive areas.

In addition, the horticultural therapy program offers other discrete benefits to individuals participating in the garden program. Recent studies show gardens, by their very nature, have remarkable restorative effects by causing feelings to shift to a more positive state. The color green, for example, is associated with equilibrium, peace and comfort, and passive involvement with gardens has been shown to reduce stress and depression, increase concentration, and increase the ability to focus attention (Kaplan, 1989; Relf, 1992).

Along with the nostalgic and reminiscent benefits inherent in gardens, plants and flowers engage all of the senses—sight, sound, touch, smell and taste—at once. Indeed, "a rose is a rose is a rose" even without the ability to communicate. The colors, textures, and scents are a universal language; contrast the lemon verbena with the tomato scent, the texture of lambs' ears to geraniums. One feels the sun's heat and warmth on one's arms and hears the babbling water and the birds. These sensory elements can be readily perceived and appreciated.

Gardening is one of the most popular avocational activities in the United States for older adults (Gardens for All, 1979). Books, television programs, botanic gardens, classes, and clubs are devoted to promoting and teaching about gardens and related activities. Participation in horticultural activities can increase an individual's opportunity to meet and socialize with others in an area of shared and common interest.

A major portion of self-esteem derives from what a person can actually do and the degree of control they have in the decision-making process. Horticultural activities are very diverse and offer the individual tangible results and end-products which have value to others. Gardening and house plant care activities can function as a work substitute and encourage decision-making: Do I grow flowers or vegetables? Do I want pink or yellow? Do I prune today or repot? Do I water today or tomorrow?

**THE RUSK INSTITUTE APHASIA COMMUNITY GROUP PROGRAM**

The Aphasia Community Group (ACG) established at the Rusk Institute of Rehabilitation Medicine in 1987 was one of the first groups orga-
nized in response to the National Aphasia Association (NAA) mandate to
develop a national support network. It is a socialization/recreation pro-
gram designed to provide conversational and social opportunity for pa-
tients with aphasia who are no longer receiving speech-language patholo-
gy services. Volunteer leaders who are trained by the Rusk professional
staff conduct the four different Aphasia Community Group weekly meet-
ings. Meetings are structured around specific activities to foster conversa-
tional and social skills (e.g., discussion of current events).

The National Aphasia Association (NAA) was established in 1987 to
act as an informational resource for individuals with aphasia, their fami-
lies, and professionals. The NAA informs the public about the nature of
aphasia and its impact to increase an awareness and understanding of the
condition. Educational materials, a newsletter, and a national support net-
work for the aphasia community are among its ongoing activities. An
effort to focus public attention on aphasia is conducted annually in June.

There are currently over 150 individual aphasia support groups called
Aphasia Community Groups (ACG) around the nation. Some are hospital
based, but the majority are community based. The NAA has been the
benefactor of a major federally-funded study of Quality of Life after Stroke,
awarded to the Rehabilitation Institute of Chicago. This funding has made it
possible to prepare and distribute a manual on creating new aphasia com-
community groups and enrich existing groups, as well as to install an 800-line
which responds to an average of 300 telephone calls each month.

A PILOT HORTICULTURAL THERAPY PROGRAM
FOR PEOPLE WITH APHASIA

A pilot horticultural therapy program was organized for patients in the
ACG Program in the spring and summer of 1994. Individuals with aphasia
and their significant others were invited to participate. The Pilot Horticult-
ure Program for patients in the ACG Program was designed to:

1. Provide a well-rounded introduction to horticulture as a leisure activity;
2. Engage in horticultural activities which have avocational values;
3. Decrease stress;
4. Increase self esteem; and
5. Provide conversational and social opportunity.

Nineteen patients (11 male/8 female) with aphasia participated in the
study. They ranged from 49 to 90 years of age (mean 73.9) and had
acquired aphasia between 1.5 to 13.5 years earlier (mean 4.3). Of those
subjects with aphasia resulting from a stroke, three had fluent aphasia and 13 had nonfluent aphasia. The aphasia severity ranged from individuals who were initially unable to communicate using speech to those who manifest mild communication deficits to those who had global aphasia. Thirteen of the patients were unemployed at the time of the stroke. The patients had been employed in a wide variety of occupations (e.g., attorney, physician, financial advisor, secretary, homemaker, wholesaler) (Table 1).

Four groups of patients and spouses participated in the program and met three different times over an eight-week period (Table 2). The focus of the program centered on the patients’ abilities and on social activities utilizing horticulture that were productive, educational, engaging and rewarding.

The Pilot Horticultural Program for Aphasia consisted of structured activities aimed at providing a well-rounded introduction to plant care as a leisure time or avocational activity. Opportunities for the pursuit of shared activities with family members and friends were highlighted. The activities were selected for their potential for reducing stress and/or increasing self-esteem and were structured to encourage decision-making and autonomy. Care was taken to provide both visual and verbal demonstration of each activity.

Each hour-long session, conducted by a horticultural therapist, included approximately six participants. The classes were dedicated to a variety of horticultural activities that were complex, yet easily broken down into single-step increments:

1. Plant propagation included activities involving various methods for growing new plants from stem cuttings, single node cuttings, division and simple repotting. The participants, patients and spouses, had a selection of plants from which to choose. The finished products were brought home.
2. Small (five-inch) container cactus gardens were made by mixing the proper soil components, choosing the individual plants for the garden, transplanting the small cactus and succulents, and finishing the project with sand and rocks. Each garden was brought home.
3. Fresh flower arrangements were created and brought home.
4. A kitchen gardening session included looking at many diverse plants grown from seeds and pits (date palm, grapefruit, coffee, macadamia plant, coconut palm) and selecting one to propagate. The fruits were all cut, shared, and eaten before propagation. The projects were all brought home to grow.
RESULTS AND DISCUSSION

The Horticultural Program for Aphasia proved to be popular with both patients and family members. All who attended expressed enthusiasm for the program and pleasure in participation. No one dropped out of the program and attendance was high. Patients without aphasia who learned of the program inquired about possible participation.

Many patients and spouses asked that the program be repeated annually
TABLE 2. Participation—Aphasia Community Group Horticultural Program.

MAY/JUNE 1994

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>May 10 (tour)</td>
<td>attendant</td>
<td>spouse</td>
<td>spouse</td>
<td>spouse</td>
<td>spouse</td>
<td>spouse</td>
<td>spouse</td>
<td>spouse</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group I</th>
<th>B.B.</th>
<th>H.G.</th>
<th>L.S.</th>
<th>F.T.</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 17-June 21</td>
<td>spouse</td>
<td>spouse</td>
<td>spouse</td>
<td>spouse</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group II</th>
<th>M.A.</th>
<th>R.G.</th>
<th>K.K.</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 24-June 28</td>
<td>attendant</td>
<td>spouse</td>
<td>spouse</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group III</th>
<th>J.A.</th>
<th>E.C.</th>
<th>B.F.</th>
<th>Z.G.</th>
<th>K.M.</th>
<th>H.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 19 (tour)</td>
<td>attendant</td>
<td>attendant</td>
<td>attendant</td>
<td>attendant</td>
<td>attendant</td>
<td>attendant</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group IV</th>
<th>I.F.</th>
<th>H.I.</th>
<th>R.J.</th>
<th>B.M.</th>
<th>M.M.</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 13 (tour)</td>
<td>attendant</td>
<td>spouse</td>
<td>spouse</td>
<td>spouse</td>
<td>spouse</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group I</th>
<th>4 patients</th>
<th>2 spouses</th>
<th>1 attendant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group II</td>
<td>4 patients</td>
<td>2 spouses</td>
<td>1 attendant</td>
</tr>
<tr>
<td>Group III</td>
<td>6 patients</td>
<td>4 attendants</td>
<td>1 spouse</td>
</tr>
<tr>
<td>Group IV</td>
<td>5 patients</td>
<td>1 spouse</td>
<td>1 spouse</td>
</tr>
</tbody>
</table>

as a regular part of the Aphasia Community Program. More than half of those who attended reported they began to care for plants which were acquired in the pilot project at home. Some of the spouses and the volunteer leaders observed that many of the individuals with aphasia appeared to do more talking while engaged in horticultural activities. One spouse indicated that houseplants became a newly shared hobby with her partner. Two of the participants with aphasia are now volunteers in the Glass Garden as a result of their experience in the pilot program.

Most endeavors require some degree of verbal skill, and it is always a challenge to find recreational and avocational activities which are suitable for individuals with aphasia. Clearly, the nature of horticultural
activities lend themselves easily to communicative disabled individuals. In the horticultural context, the lack of demand for verbal interaction reduces the burden on the disabled communicator, thereby relieving stress and facilitating relaxation and pleasure. This is believed to foster the increased talking observed by spouses and volunteers. Contact with living plants and natural materials provides soothing and comforting sensory involvement. The enjoyment and satisfaction expressed by the patients reflect this. The possibility of creating environments in which houseplants can thrive under the patient’s nurturing care can bring gratification and reward to the individual. This is revealed by the continued horticultural therapy participation of patients who became volunteers, and by the increased socialization and verbalizations of patients we observed. Family members also reported patient gratification.

The Rusk Institute pilot horticultural project has opened up new and exciting possibilities for further application in providing support and socialization to individuals with aphasia. The horticultural activity seemed to also stimulate the use of related vocabulary, e.g., enthusiasm for horticulture therapy may facilitate the use of associated words such as flower, leaf, etc. We hope to gain new experience with this tool and develop other models of horticultural activity for individuals with communication disorders. The Pilot Horticultural Program was not designed as a research project, therefore, outcome data are not available. A method for collecting such outcome information is included in the planned replication of this project.

REFERENCES

