

# The Effect of Public Garden Visitation on Older Adults with Depression

## A Manual for Developing a Public Program

### **Introduction**

This manual is intended to inform museums, gardens and public facilities about a study undertaken by The Morikami Museum and Japanese Gardens in collaboration with the Christine E. Lynn College of Nursing that examined the effect of healing gardens and art therapy on older adults with mild to moderate depression. This manual is intended for the use of other organizations as a guide in developing a program or other instrument based on the results of The Morikami study that can be offered to the public to meet a need in society as a nonstandard way for the institution to serve the public. The kinds of institutions that this manual might benefit include public gardens, museums with horticultural features or gardens attached as part of their facilities, historic or restored homes with attached gardens, zoological parks, botanical gardens, and nature centers.

The Morikami study was funded through a grant from the Institute of Museum and Library Services (IMLS). Recognizing both the trend in society toward a greater incidence of depression among elders and the need for self-directed methods of alleviating the symptoms of depression, the designers of the study sought to compare the effects of two kinds of “interventions” involving regular garden visits against a third intervention utilizing art therapy. (An intervention is a set of activities intended for the purpose of alleviating depression.) Researchers undertook the study to determine whether or not garden visits were as effective as, or more effective than, art therapy in relieving symptoms of depression in older adults. Art therapy is an intervention that previously has been shown to decrease depression in the elderly by allowing elders to express feelings of sadness and loss.

### **Purpose of the Study**

One of the fastest growing segments of the U. S. population is older adults over age 65. The number of people in the United States ages 65 and over is expected to roughly double by 2030. Moreover, that age group is forecast to grow from about 13% of the total population in 2000 to 20% in 2030, and to remain above 20% for at least several decades thereafter. In the next five to 20 years, 76 million Baby Boomers will reach retirement and seek alternative ways to meet their personal needs. A characteristic of this demographic group is the growing incidence of depression and its physiological consequences of life-threatening diseases, not to mention its impact on families and communities caring for them.

Prevalence of depression among healthy older adults in the U.S. is about 15%, while among those with chronic diseases the number rises to 25%. Among elders, depression can be caused by social isolation occurring through the loss of friends,

relatives, and loved ones, and also through debilitation resulting from chronic disease. Depression is an illness that involves the body, mood, and thoughts. It affects the way a person eats and sleeps, the way one feels about oneself, and the way one perceives and interacts with his or her environment. The economic cost of this disorder is high, but the cost in human suffering cannot be estimated.

Depressive illnesses often interfere with normal functioning and cause pain and suffering not only to those who have a disorder, but also to those who care about them. Serious depression can destroy family life as well as the life of the ill person. Depression in later life has serious consequences including patient and caregiver distress, exacerbation of existing diseases, cognitive disorders, increased health care costs, and increased rates of mortality. Many older adults do not seek help for their depressive symptoms but often present to their primary care provider somatic symptoms that are not resolved with treatment because the underlying problem of depression is not addressed.

Improving health and well-being among those over 65 will be a challenge economically and physically for those in the health care professions. Finding cost effective, self-directed, and safe methods to alleviate depression will assist health care providers and others to facilitate health and well-being in older adults. Evidence to support the hypothesis that garden visitation alleviates symptoms of depression in the elderly would offer a means of addressing a real need in society, a means that does not rely on medication for its effectiveness. For organizations that maintain public gardens, such evidence might provide another way in which they could serve the public, attract visitors, or promote their facilities.

## **Previous Research**

The findings of a number of previous studies have suggested that garden walks, or aspects of a garden-walk intervention, can have beneficial effects on elders who suffer from depression. Cognitive behavioral therapies, such as meditation, contemplation, guided imagery, and cognitive behavioral restructuring, have been shown to help research subjects distinguish between problems that can and cannot be resolved and develop better coping skills. Also, a large body of evidence (>1000 trials) relates increased exercise to decreased depression. Garden walking as an intervention to decrease depression includes both cognitive behavioral therapy and exercise aspects.

In Japan, a healing intervention called *shinrin-yoka*, referring to walking in a forest to promote health, is a form of relaxation used by many older adults. Researchers who studied *shinrin-yoka* found that walking in the forest was advantageous with respect to chronic stress and depression. The researchers state that walking in a forest setting has no requirements and anyone can take part in this simple therapy. While the study did not determine whether the effects of forest-walking were due to visual factors of scenic beauty alone or a mix of more complex factors, the study did demonstrate reductions in hostility and depression scores.

Similarly, a large study in the U.S. has found that a positive relationship exists between the amount of green space in the living environment and physical and mental health and longevity. Gardens have proven to be effective in assisting persons to relax, distracting them from negative stimuli and generating positive thoughts, thereby improving mood. Some researchers, like Roger Ulrich, have developed the notion of the

“healing garden” based on the perception that gardens have the ability to alleviate feelings of anxiety or make someone suffering from chronic illness or injury feel better about his or her condition. A healing garden, or therapeutic landscape, as it is also called, is a garden environment usually attached to a health-care facility for the intended purpose of providing a means of restoring mental balance to one who is suffering from physical illness or injury. Such gardens follow from the observation of Ulrich and others that “viewing natural scenes fosters stress recovery.” Built intentionally to achieve this, healing gardens are meant to be transformative spaces in which pleasing combinations of design elements, both natural and man-made, create environments that are experienced as therapeutic or beneficial because they have the ability to alter moods in humans.

### **The Morikami Japanese Gardens**

The study of the effects of regular garden visitation on mild depression in the elderly was undertaken by the Christine E. Lynn College of Nursing at Florida Atlantic University, Boca Raton, Florida, in collaboration with The Morikami Museum and Japanese Gardens. To carry out the study, the College of Nursing staff utilized Roji-en, the George D. and Harriet W. Cornell Japanese Garden at Morikami Park. The garden is a 16-acre site landscaped in Japanese fashion that is connected to The Morikami Museum of Japanese Culture. The park, museum, and garden are located in Palm Beach County, Florida, and are owned by the county and operated through its Department of Parks and Recreation. The park and museum are named for Sukeji (“George”) Morikami, a Japanese expatriate who came to southern Florida in 1906 to join a pioneering community of Japanese settlers called the Yamato Colony. Although the colony effort failed after a few years, Morikami remained in Palm Beach County for the rest of his life.

The garden was designed by Hoichi Kurisu of Kurisu International. The 16 acres are accessible by means of a meandering, 7/8-mile gravel path circling a lake that is the garden’s central feature. The terrain is essentially flat, although visitors may take advantage of climbing a hill feature in the Modern Romantic Garden area.

The garden at Morikami Park is designed in Japanese fashion, without an emphasis on flowers (although flowering plants are plentiful) or plantings in formalized, symmetrical beds. Built features such as roofed gates, bridges, a roofed resthouse or “contemplation pavilion,” multi-level stone towers or pagodas, and stone lanterns, are present throughout. Large boulders also provide stability to balance the airy, leafiness of the plantings. Besides the central lake, a number of other water features exist in the garden, including ponds, streams, and cascades of various heights, overlooked by numerous places to sit and reflect. The garden is partially divided into six smaller garden sites that demonstrate to a degree how Japanese garden design has evolved over the centuries from the Heian Period a thousand years ago to the Meiji Period one hundred years ago.

The designer, however, prefers to downplay the objective perception of these gardens as historical artifacts in favor of a subjective appreciation of the garden environment. For him, the garden is first and foremost to be enjoyed for its efficacious effect on the senses, mood, and outlook. In this regard, believes Kurisu, Japanese gardens in general and the example at Morikami Park in particular are ideally suited to serve as therapeutic landscapes.

## **The Study**

Fifty-eight seniors participated in the study, which took place during successive six-week periods during 2006 and 2007. Study participants were divided randomly into three groups, with eight to ten participants per group. Participants in Group I walked the garden individually on their own. Participants in Group II walked the garden with a guided imagery leader, while participants in Group III did not visit the garden but instead participated in art therapy sessions. Researchers measured the effect of each intervention on depression through: 1) a questionnaire called the Geriatric Depression Scale (GDS) that asked about participants' feelings on the day the questions were administered, 2) stories of sadness and joy shared by the elders and analyzed by means of a software program called Linguistic Inquiry and Word Count, and 3) group interviews with the elders who had participated. The GDS was administered and the stories of sadness and joy collected both before and after the garden walks and the art therapy took place; group interviews were conducted following the interventions only.

For the study, each group met twice weekly for a period of six weeks, or for a total of twelve sessions. Group I walked through the garden without on-going walking guidance. The participants were met by the principal investigator, were signed in each day, and were encouraged to walk at their own pace and stop as needed for rest and reflection. They could speak with others in their group or walk in a solitary fashion. Each participant spent from between 45 minutes to two hours in the garden.

Group II met on days of the week different from Group I. The group walked through the garden with the benefit of a trained therapist who used "guided imagery" to call attention to garden features and nuances and suggested ways in which they could be related to the lives of the participants. Guided imagery is a form of focused relaxation used to create harmony between the mind and body aimed at easing stress and promoting a sense of peace and tranquility at a stressful or difficult time. This type of relaxation has been shown to promote wellness and optimize overall health. Group II participants stayed together throughout the walk, sat and rested at appropriate intervals, and listened to the guided imagery script. The duration of each session was approximately two hours.

Group III did not meet at The Morikami Museum but participated in an art therapy program at the Christine E. Lynn College of Nursing. This group was used as a comparison for the walking interventions. Since art therapy is well documented to reduce depression in elders, comparing the results of participation in art therapy by Group III to the two groups that walked in the garden allowed researchers to conclude whether or not similar benefits occurred for these other groups as well.

## **Study Findings**

Regardless of the type of intervention a participant undertook, analysis of the scores on the Geriatric Depression Scale and of the stories of sadness and joy indicated a significant difference in the severity of the participants' depression from pre- to post-intervention. None of the three interventions, though, was significantly more successful in alleviating the symptoms of depression than either of the other two. While both independent walking in the garden and walking in the garden with the benefit of guided

imagery were at least as successful as art therapy in alleviating symptoms of depression, neither was more successful than art therapy, although walking with guided imagery was slightly more successful than independent walking.

In the analysis of the stories of sadness and joy all participants' negative emotion word-use decreased and their positive emotion word-use increased from the pre- to the post-intervention measurement whether participants walked independently, walked with guided imagery or had art therapy. The walk-alone and the guided imagery groups had equivalent average decreases (.5%) in negative emotion word-use. The guided imagery group, though, had a greater increase in positive emotion word-use (.8%) in comparison to the walk-alone group (.2%). Although both interventions had success in alleviating feelings of depression among the seniors participating in the study, walking in the garden with the benefit of guided imagery had somewhat greater success than independent walking, according to the analysis of the positive emotion word-use in stories of sadness and joy.

### **Results from the Group Interviews**

In group interviews conducted at the end of each six-week session, themes expressed by Group I, the walk-alone group, included enjoyment of walking, the sense of looking forward to something, the sense of peace and serenity in the garden, and taking advantage of time for reflection about the meaning of life. Interestingly, many of the older adults in Group I had never spent time in reflection before, and this new experience provided them with the ability to review their lives and identify good and strong reasons for feeling satisfied. Several were able to reflect on problems and “put things in perspective,” which assisted in realizing that overall their lives were “good and blessed.”

#### Statements from Group I

- I like being in the garden before anyone else is there.
- I liked the peace and serenity of the garden.
- Every time I came to the garden I saw something different. Each day the garden had different surprises for me. When the weather was cloudy the garden looked entirely different than when it was sunny.
- When I want to be peaceful in my heart now, I just stop and think of the garden.
- I had good days and bad days before the garden, but now I really look forward to my own time and interaction with the garden. I actually think I have become addicted to coming here and spending time reflecting about my life.
- I learned a lot about myself in the garden. The walk gave me time to think about my life (the good and the bad) and to come to terms with who I am and how I lived my life. I had not done this before and am so grateful to have had this opportunity.
- I think everyone should have the wonderful experience of walking in this peaceful garden. I loved the sound of the bamboo – one day when it was a little windy, the bamboo was swishing and cracking and I stood there for over an hour.

Participants in Group II, the guided imagery group, stated in group interviews that the guided imagery encouraged them to leave problems experienced in the past behind as they crossed the bridge at the beginning of the walk and to focus on a pleasant and fulfilling future. One person in the group mentioned that as they were walking together one day they saw an alligator in the lake. The guided imagery leader made the statement that there are always surprises under the surface of life, some pleasant, some dangerous, some sad, that pop up to the surface from time to time. Being able to look at life surprises as a part of life's cycle and realizing that everyone has challenges to deal with helps make life more bearable and meaningful. This group said one of the benefits of the garden walk as a group was that they shared feelings about getting older and the problems they faced. Knowing that others were experiencing the same types of problems encouraged them to see their own lives in a more positive way.

#### Statements from Group II

- It was so wonderful to meet all of these new people. We have shared so much about our lives. It helps me to see that I am not alone in the way I feel.
- The day we saw the alligator was interesting. I realized that there are always surprises in life and that we just have to handle them as best we can and not to worry so much about every little thing.
- The garden and my new friends have given me insight into my life and helped me to see that I have so much to be thankful for.
- The guided imagery leader was so wonderful. We had a good time and enjoyed the beauty of the gardens.
- When we closed our eyes to listen to the nature sounds and see ourselves as a small part of this larger world, I was able to see myself as connected to everything even though I am only a small part of it all.

Finally, Group III, the art therapy group, discussed the building of relationships during the art therapy sessions. This group felt that exploring who they were, with an initial drawing of self, then drawing different parts of their lives each week of the class, and finally drawing what they had become in the six weeks of the class, helped them reveal strengths and uncover sorrows that they did not know they had. This group felt that the art therapy sessions were cathartic, and the shared experience with other members in the group was helpful in this process.

#### Statements from Group III

- Coming to art therapy is the best part of my week. I have really enjoyed learning more about myself and that others share many of my problems.
- The art therapy classes were very good. They helped me to learn more about myself and what was really going on. It is surprising how you hide things from yourself.
- The art therapist was great and she was so patient and kind. She helped us delve into things and helped me make peace with some of my issues. I feel more in

control of my life and the decisions I am making now.

- The whole group and the art therapy helped me to become stronger than I was. I felt so empty since my husband died and out of control as though my life would never have meaning again. These classes have put some perspective on my feelings and even though I am still sad and would give the whole world to have my husband back, I realize I can go on and I can have a good life. It will not be easy, and I know there will be times when I will feel out of control again, but these sessions have been a big help.

**Making Use of the Study Findings**

According to the results of the study conducted at The Morikami Museum and Japanese Gardens, a regular program of walks in a garden setting will alleviate symptoms of depression in older individuals. While the study at The Morikami was conducted at a Japanese garden that was also designed to be a healing space, researchers at the Lynn College of Nursing believe that many of the components that created the positive outcomes measured may be translated to other garden or natural settings as well. The study suggests several ways in which custodians of these sites can use the results of the study to benefit their communities and to boost visitorship.

On the most basic level, a garden may simply tout the results of the study: that visits to gardens on a regular basis can lead to sound mental health outcomes. A garden may also initiate a walk-alone program in which participants would be met or greeted by a representative of the organization at the beginning of each walking session but otherwise allowed to walk the garden on their own following an initial orientation session. On a more complex level still, a garden may contract with a trained therapist to provide guided imagery walks with groups of program participants. The therapist would likely need to develop a series of scripts, specific to the site, to be used for successive visits to the garden over the period of such a program. Finally, although the purpose of the study was to assess the impact of walking in a garden on depression in comparison to art therapy, an art museum that offers art instruction and has facilities for it could offer this alternative instead.

However, art therapy, like guided imagery, necessitates the active involvement of a trained therapist. Programs involving either guided imagery or art therapy, because of their involvement with mental health professionals, may be more expensive than the public is able to support and certainly more expensive than a program of simple garden walks.

Regardless of what kind of program an institution initiates based on the result of the study at The Morikami, program organizers should be aware that, along with the simple act of walking in a garden, the following elements of the study also appeared to have importance in achieving the goal of alleviating depression:

- 1) The opportunity to tell or write personal stories of sadness and joy in order to initiate or invoke a reflective frame of mind. While story-telling began as a measurement tool for the study, it turned out also to contribute to each participant’s identification of the reasons for depression and to begin the process of healing before the interventions began.
- 2) A certain sense of structure to the experience in order to encourage the

discipline necessary to complete a program or series of walking sessions by giving the exercise purpose.

3) A series of walking sessions rather than a single session. The study was conducted over a six-week period, with participants undergoing the interventions, that is, walking in the garden or engaging in art therapy, twice weekly for a total of twelve sessions. Ideally, visits should occur two times a week as in the study, but practically, the researchers found, a rigid adherence to such a schedule was impractical for many participants. In subsequent testing of a program based on the study results, researchers found that flexible self-scheduling was key to subject participation.

In the program devised by The Morikami, which museum staff has given the title, “Stroll for Well-Being: Garden Walks at The Morikami”, each participant utilizes a journal in which to record not only personal stories of sadness and joy but feelings and observations during or after each walking session. The idea of a journal came about as the importance of expressing stories of sadness and joy became apparent. Since it would be inappropriate for staff members of public gardens, who are unlikely to be mental health professionals, to solicit and collect oral versions of such highly personal narratives, another format allowing program participants to express themselves was sought. The journal as devised by The Morikami is a printed piece that also contains scripts for guided imagery providing twelve “tours”, one each on the themes of Awareness, Possibility, Transition, Connection, Journey, Trust, Joy, Freedom, Forgiveness, Reflection, Gratitude and Fulfillment. The scripts were developed by the researchers at the Lynn College of Nursing as part of the study project.

Also taken into consideration in the program at The Morikami is participant safety. A criterion for participation in the original study was the ability to walk the nearly one mile of pathway of the garden at Morikami Park. In any program of garden walks, participants must be informed of the distances they may find themselves walking in order to allow them to determine whether or not they have the physical stamina for such activity. Walking in the garden is not by any means intended to be a strenuous exercise. During the study at The Morikami, individual participants sometimes felt as though they could not walk the entire 7/8 of a mile around the garden. Participants in the subsequent program are cautioned to go only as far as they feel comfortable, rest on a bench, and then turn back, as time spent in the garden can be adequate without walking the entire length of the pathway. At The Morikami, several water stations are present throughout to provide drinking water, and benches and rocks are available for sitting and resting. Park employees routinely monitor the walkways in golf carts to assist anyone who can not complete the walk. Measures must be in place to assure the participant’s comfort at all times and to provide for emergencies.

A series of twelve visits or walking sessions at The Morikami begins with an initial introductory meeting with program participants. This introduction includes a discussion of the findings of the study and a description of the program and its intent to foster reflection, reduce stress, and manage feelings of sadness, that is, to alleviate symptoms of depression and provide an experience in a healing space to promote well-being and resilience when sad things happen. Participants are told that they may walk alone or with others in the group. Participants may come at any time during the garden’s regular public hours, and are provided with a museum membership (built into the program’s fee) so that they can enter the museum and garden easily.

The purpose of the journal is also discussed at the initial meeting, and the journals distributed to all participants, who are asked to spend 20 or 30 minutes writing on what in their lives has brought them sadness and joy in the past, what does so in the present, and what their hopes are for the future. Alternatively, participants may be asked to take the journal with them and write their initial stories of sadness and joy in the comfort of their own homes, although having them write at the meeting helps provide structure to the experience and an opportunity for quiet reflection. Participants should be asked to write in their journals each time they come to the garden to walk. This journaling can be a few sentences or a few pages depending on the participant.

Participants are also guided on a first walk through the garden space at this initial meeting. The five guided imagery stops utilized by the scripts in the journal are identified and other healing elements or places of interest within the garden are pointed out, as well as all places to stop and rest. It is important to let participants know that they may spend as much time as they like in the garden and that they should feel free to take the time necessary to reflect and allow the ambiance of the garden space provide peace and relaxation for them.

This initial meeting, then, is followed by the program of twelve garden visits or walks, to be completed, or substantially completed, over a twelve-week period. At the end of the twelve-weeks, another meeting is planned as a wrap-up of the experience and an opportunity to evaluate the program and its benefits to the participants. The intent of the session is to learn how the walk was experienced and what can be done to make it better, in order to provide information that will benefit future groups and make their experiences more meaningful. Of course, if program participants feel they can continue to derive benefit from visiting the garden with the guided imagery tours provided by the journal, they are free to do so for up to one year with their museum membership.

Researchers at the Christine E. Lynn College of Nursing and the staff of The Morikami tested the program with forty participants who walked the garden independently using the journal to record personal thoughts and observations. In comments submitted following the completion of twelve visits, participants reported positive health outcomes as a result of the program, citing time away from daily pressures, characteristics of the garden such as its beauty and tranquility, the journal as a guide, and the opportunity to record one's thoughts among the factors that contributed to their experiences.

As the staff of The Morikami becomes more skilled in administering the program, information obtained from participants in wrap-up sessions will likely suggest changes to that will be reported here. Other institutions are also encouraged to share their own experiences in offering garden walks to their visitors for therapeutic purposes.

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