CITATION:


Benefits of Gardening: An Exploratory Study of Mid-Aged Women in New Zealand

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INTRODUCTION

Around the time of menopause, between the ages of 43-55, women may experience changes in physical as well as emotional well-being. Research has shown that keeping active and engaging in regular exercise has positive effects on overall health status, both present and future (Kushi et al 1997, Taylor 1990). Among middle-aged women in New Zealand, gardening is a popular activity, one which can be pursued in many ways and tailored to an individual’s needs and circumstances. Other studies (Keller 1994, Rice 1993, Kaplan 1973) suggest that gardening is therapeutic for various groups, including older adults and people experiencing depression, but little, if any, research has been done specifically on menopausal women and the potential benefits of gardening. Consequently, a survey of active women gardeners in this age group was conducted to assess their level of health and emotional well-being, and to examine potential positive effects they derive from their gardening activities.

Historically, the impetus for investigation of gardening and related activities has been rooted in determining tangible benefits reaped from both the physical exercise (Relf, 1998) and the enjoyment of producing and consuming fresh produce. Energy expended in various gardening activities is found to equal the amount of effort used for performing other moderate exercises such as brisk walking, stationary bicycling, pulling golf clubs, and downhill skiing (Ainsworth, 1994). An Australian Nursery Industry survey of 601 householders found that self-reported good health was positively correlated with gardening, even with as little as an hour per week spent gardening (1996).

The 1996/97 New Zealand Health Survey, which provides a nationally representative survey of the health status of New Zealanders, reveals that gardening is second only to walking as the most popular form of physical activity. Gardening was most frequently practised by women respondents (42.2%) and both sexes of respondents
over age 65 (54.2%) and ages 45-64 (48.3%). The total population of New Zealand gardeners is estimated to be 1,023,034 (MOH, 1999). Clearly, gardening is recognised as a source of beneficial exercise for promoting good physical health.

The notion of intangible benefits to be gained from gardening led Kaplan to research with Lewis in 1976 the types of pleasure people find in gardening (Kaplan & Kaplan 1989). From a sampling of over 4,000 members of the American Horticultural Society, their survey revealed that the gardeners’ most top-rated satisfaction was not growing plants, but achieving an inner sense of serenity. More than 60% of the respondents said their most important reward for gardening was “peace and tranquillity”. Two decades hence, Lewis (1996) continued to explore the interaction of people and plants:

“The difference between gardening as an activity and gardening as psychological experience is the difference between what the gardener does and what the gardener feels. We must gain a new perspective that will allow us to step back and observe ourselves as gardeners who observe and respond to green nature….Gardening is loved not only for what is produced in the soil but also for the joy with which it rewards each gardener” (p. 52)

Taking the leap from gardening as pleasure to gardening as therapy was the next logical step for researchers interested in people-plant relationships. Although the actual practice of horticultural therapy has been recognised for over a century, the contribution of the discipline of horticultural therapy to advancing human health and well-being is just coming to be understood (Davis, 1998).

Today the applications of “prescriptive horticulture” as developed by Mattson (1992) include not only the aforementioned health and physical benefits, but also the following:

- stress reduction
- emotion release, especially depression and anger
- expression and communication of grief
- social bonding
- enhancement of self-esteem

Women at the age of menopause are often challenged with changing physical and emotional circumstances and responses (Beckham, 1995). Given the growing evidence that involvement with gardening offers many valuable benefits, the premise for the present study was to interview active mid-aged women gardeners and identify the benefits they receive from gardening. It was originally intended to be an exploratory pilot study to gain insight into the physical and psychological health of these women, to identify the amount of time and activity spent in the garden, and to determine their motivations and perceived benefits. The aims of the research were:

1) To examine the relationship between mid-aged women’s level of participation in various gardening activities and their psychological and physical well-being
2) To determine what role, if any, the participation in such gardening activities plays in maintaining or improving their health or mood state

3) To describe the beneficial effects of the gardening activities

The ultimate aim of this study was to explore whether it is feasible to design a therapeutic gardening intervention programme for mildly depressed mid-aged women and whether any particular health profile can be linked with those who are active gardeners. The findings are presented from two phases of inquiry consisting of 1) personal interviews with 80 women gardeners from the study area, and 2) mail-out surveys of 65 women gardeners from around New Zealand. In addition, the body of qualitative responses received in the form of comments and letters are reviewed and discussed.
METHODOLOGY

As a pilot study to investigate the gardening activities and motivations of mid-aged women and to identify their health-related benefits from gardening, the initial phase of the research design was to recruit 40-50 women who were active gardeners through means of advertising and contact with local gardening clubs. Response to the advertisements for participants resulted in a total of 80 women being enlisted in the study, ranging from ages 42 to 82 years. Subsequently, interviews with each respondent were conducted, over a three-month period during late summer/early autumn of 1999, with an average length of one hour.

Due to the publicity generated by the local and national media, expression of interest in participation in the study began to emerge from gardeners around New Zealand, many of the letters containing personal stories of the meaning of gardening in their lives. Since most of these women were outside of the study area, a second phase of inquiry was instigated by means of a mail-out survey during the winter of 1999. This group of respondents numbered 66.

The survey contained a) questions pertaining to personal and demographic information, b) a menopausal assessment form, c) a gardening activity inventory, and d) a format for ranking the participants’ reasons for garden involvement. In addition, they were asked to complete standardized assessment tools measuring physical and psychological health and a personality inventory.

Foremost in the instrument design rationale was the goal of correlating the degree and type of gardening activities with respondents’ health and emotional well-being. The motivation for gardening and the perceived benefits were also to be correlated with variables such as personal gardening history, menopausal symptoms, number of hours spent in the garden, and physical limitations, if any.

PARTICIPANTS IN THE STUDY

The survey respondents consisted of 145 women gardeners, mostly from the lower North Island (65%) and the rest from all around New Zealand, with an average age of 53 years, ranging from 40 - 82 years. The women were overwhelmingly of European descent with post-high school qualifications, although a third had only high school education or less. Their menopause status was: 15% pre-menopausal, 42% in menopause, and 43% post-menopausal. Two-thirds of them worked outside the home at least 20 hours per week, including the self-employed. All but one of the women had gardened as a child or young adult.

The vast majority of the respondents (91%) rated their health status as either excellent or good (42%, 49% respectively). Most of the women had no physical limitations to gardening, with only 2 women listing age as a limitation.

The total number of actual hours the gardeners spent in the garden averaged 76 hours per month. The average number of ideal hours to spend was 100, and the majority of women (71%) wished they could spend more time in the garden.
RESULTS AND DISCUSSION OF QUANTITATIVE DATA

Those gardeners with a higher self-rating of health or with higher psychological and physical well-being scores did not spend more time on average in the garden than the less healthy ones. Similarly, there were few differences in terms of satisfaction from gardening between the higher and lower amounts of time spent in the garden.

Based on a lifetime involvement with public gardens and working with plants, Lewis postulates that the most intimate person-plant relationship occurs in gardening, where we physically participate in nurturing “green nature”. As such, two images can be recognised:

“The first is the physical garden, the familiar flowers, trees, and shrubs of a three-dimensional world. The second is the mental garden that is found ‘through the looking glass’—non-physical, seldom perceived, and occurring in the infinite dimensions of the mind. The two are joined by an experience that results from their interaction.” (Lewis 1996, p.50)

It is this psychological experience of the mental garden that seems to be at the core of the motivations for gardening as expressed by the women surveyed. The reasons listed as being of highest importance to the gardeners indicate a strong prevalence of non-physical or inner-directed rewards from gardening:

- I find satisfaction from gardening 69%
- I find gardening to be relaxing and rejuvenating 59%
- I find inner peace from gardening 57%
- I enjoy creating something of beauty 43%
- I enjoy taking care of plants 39%

The emphasis that the women placed on the above rewards is evidence that gardening is considered valuable for more than just the outer benefits of physical exercise and tangible results, which long have been recognised. While the most frequently cited reason is that of “satisfaction” from gardening, the exact meaning of that term is uncertain given the small scope of the portion of the survey devoted to motivations for engaging in gardening activities. As with Kaplan’s 1976 study (Kaplan & Kaplan 1989) of the various kinds of gardening satisfactions expressed by members of the American Horticultural Society, where more than 60% of the respondents gave “peacefulness and tranquillity” as their most important reward, so too did the menopausal women in the present study find “relaxation and rejuvenation” and “inner peace” from gardening.

Since gardeners with a higher self-rating of health or lower psychological distress scores did not spend more time on average in the garden than the less healthy ones, it appears that the number of hours spent doing garden activities is not a determinant of overall physical or mental health. In general, the post-menopausal group of women evidenced better mental health than the pre-menopausal and menopausal groups. There were no significant differences, however, in the amount of time spent gardening or the type of gardening activities between the groups, indicating that the older women participated in gardening no less actively than their younger counterparts.
When the type of garden activity was analysed in conjunction with the reasons for garden involvement, there was no significant difference between the types of reasons and the perceived benefits for those women who were passively involved as opposed to those who were very actively engaged in the garden. This suggests that women generally practice the art of gardening for more characteristically inner-directed/non-physical reasons, regardless of whether they are actively and directly involved or not. This also implies that gardening can be psychologically and emotionally beneficial to those people who are only passively involved with the garden or have physical limitations to being actively involved. In other words, a woman may actually perform very little active work in the garden, but still perceive that she is finding such benefits as relaxation, inner peace, and personal satisfaction. Similarly, analysis of time spent in the garden showed that great satisfaction can be found in spending limited amounts of time gardening, as little as 12 hours per month.

A deeper look into the women’s motives and involvement with gardening revealed three distinct groups of gardener “profiles” (see box). The first of these is called the “happy healthy gardeners”. These were largely post menopausal, highly educated women with few physical limitations who worked long hours outside the home. They were happy, well adjusted and had learned ‘the art of relaxing in their garden’. These women loved their gardens, but as a hobby rather than as a primary focus of their life.

The second group is defined as being “even-keeled gardeners”. They were balanced in their approach to gardening, mixing both passive and active behavior, and they scored average on most of the health measures. However, group three, the 'introspective gardeners', was markedly different to the previous two. Most of these women were in menopause, over half had physical limitations and 45% had had hysterectomies. Levels of education and hours worked outside the home were significantly lower. These women were generally introverted but also highly open, essentially meaning that they would take on worries but were reluctant to share them, 'stewing' on issues with little help from others. Such women were very open to depression. Some had been suicidal in the past, while others had experienced very traumatic or stressful times. For many of these women gardening was literally a “lifesaver”, an essential way of preserving their mental stability.

The three profiles support the premise that involvement with gardening serves a wide range of purposes and meets the needs of healthy well-adjusted women as well as those with various psychological and physical impairments.

(Box)

Happy Healthy Gardener

These women know how to relax and enjoy their garden

- Postmenopausal
- Very few physical limitations or hysterectomies.
- Work outside the home 31+ hours/week
- University education level
- Highly open, agreeable and extroverted
- Value satisfaction and relaxation from gardening
- Spend the most time relaxing in the garden (8 hours/month)
Even-Keeled Gardener
This group was basically average in everything!
• Menopausal to post menopausal
• Some physical limitations
• Post-high school education or vocational training
• Work outside the home 24+ hours/week
• Average on personality scales
• Value gardening for satisfaction, relaxation and inner peace
• Spend the most time doing passive gardening activities.

Introspective Gardener
This group also displayed the most menopausal symptoms
• In menopause
• Physical limitations - 51%
• Hysterectomies - 45%
• High school education or less.
• Work outside the home 21+ hours/week
• Tend to be highly introverted but highly open
• Value gardening for inner peace and the chance to be alone
• Spend the least time relaxing in the garden (4.5 hours/month)

The relationship of gardening and need satisfaction was also evidenced by the 54 women in the study who claimed to have some form of physical limitation. These women gained immense benefit from gardening in spite of being in poorer health. Compared to the more physically able women, there were no group differences in types of gardening activities, total gardening hours, or ideal gardening hours. However, the less physically able women differed from the other women in their reasons for gardening, giving more importance to finding satisfaction and inner peace. These results suggest that the women with disabilities may be experiencing their gardening as particularly satisfying, possibly because they are pursuing it in the face of physical limitations. It is also possible that this group valued the experience of being alone in the garden as an escape from stress. The notable finding is that despite varying levels and types of physical handicaps, these women still were able to pursue their gardening interests.

QUALITATIVE RESULTS AND DISCUSSION

Looking beyond the data toward the many comments and letters received from over 70 respondent gardeners around New Zealand, a rich picture emerged of the meaning of gardening in the lives of middle-aged women. Several themes are evident, symbolising the garden as an avenue to the various aspects of a gardener’s mental, physical, psychological, and spiritual make-up. The following themes appear in the women’s writings, identifying gardening as:

- a connection to the past (memories of loved ones), the present (friends and other gardeners), and the future (children and grandchildren).
- a spiritual relationship to nature, the earth, and God.
- an expression of creativity, freedom, and control.
- a source of joy, wonder, and satisfaction.
- a time for reflection, problem-solving, and retreat.
- a source of enhanced well-being and physical exercise.
- a therapeutic tool for maintaining sanity in a stressful world.

Connection to past, present, and future

Garden plants as memories of loved ones are often mentioned as being a reason for enjoyment of gardening, especially for accepting the cycles of life, as illustrated by the following quotes:

“Plants can have memories of the people who first gave them to you or loved them, or died when they were in flower.”

“The garden has acted as a ‘recorder’, a repository of thoughts and emotions, and brought them back to mind as I ‘turned the page over’ a second time.”

Similarly, the interest of plants and gardening provides an avenue to share with other plant-lovers. The women repeatedly referred to the garden as a means to exchange stories, ideas, and experiences with fellow gardeners, as well as a source of sharing plants, seeds, cuttings, and flowers with friends and loved ones.

“Plants are often gifts from friends and so when I look after them it is like making contact with my friends.”

“I love the whole ‘sharing’ experience of gardening—admiring friend’s gardens, swapping plant material to get plants growing in my own garden that gives memories/thoughts of other people.”

The idea of the garden living on, beyond the present and their own lifetime, gives many women the desire to pass on family heirloom plants or to teach their children and grandchildren the joys of working with nature.

“With four grandchildren now, I have had a real incentive to potter around and keep up my hard work in the garden, as the children love to follow me around looking at new seeds, plants, and other developments.

Spiritual relationship to nature, the earth, and God

Perhaps the most intangible reward cited by the women gardeners in their comments and letters is the indefinable relationship they feel with the outdoors, the earth, and the universe—the true essence of gardening. Many feel it brings them closer to God while others simply enjoy being outside in the fresh air and infusing the sights, sounds, and smells of the natural world.
For others, the garden plays a role in creating a spiritual link to the Creator and nourishing their souls, inspiring them with the wonders of nature, and hope for the future.

“When I have my hands in the earth, I feel in touch with myself, with nature, with the universe——with God, I suppose.”

**Expression of creativity, freedom, and control**

The canvas of the garden is seen as a creative exercise that offers freedom to design, implement, and redesign as time goes on, nurturing a seedling from birth to death and rebirth.

“I think the need to create beauty——life——growth and use all my senses in that creation is of highest importance.”

It offers a form of control that a woman may not have in other areas of her life——an opportunity to express whims and desires, sentiments and longings, imperfections and idiosyncrasies.

“[I] can be creative and constructive and have control over this area of life. Need to keep it tidy as this gives me a sense of peace and control.”

Ultimately the garden becomes the reflection of oneself.

“My garden is a way of expressing my personality.”

“I can’t help it, have to grow things!”

**Source of joy, wonder, and satisfaction**

Without enjoyment gardening becomes a chore, as some people do confess, but the women gardeners in this study have discovered the secret of nature and are infatuated with it. They speak of the changing beauty, the textured patterns, the joy of working with bare hands in the soil, and seeing plants grow. Others love walking around the garden looking at each day’s new growth, talking and touching special trees and plants, forever amazed at the miracles of survival.

“I like seeing plants growing and the beautiful colors and shapes God made.”

“Whenever I need a break from other interests and chores I go out and just enjoy looking at how the garden is developing.”

Many enjoy harvesting the fruits and vegetables and making their own jams and preserves, gathering flowers for arranging or drying for a winter’s day.

“I really enjoy the activity——plus the satisfaction when it’s all done.”
Time for reflecting, problem-solving, and retreating

In contrast to the outer stimulation of nature’s multitude of sensuous encounters, New Zealand women find yet another dimension of the gardening experience that serves the inner needs for time alone to reflect, to problem-solve, and to retreat into one’s own world. The garden as a peaceful haven is perhaps the first perception in the minds of many women that draws them to the untamed landscape of the paddock or back yard.

“The back garden which is closed off and private is my favorite part. I feel as though I am creating a peaceful haven away from the world.”

Seeking to escape from the daily complexities of work and family, the garden is seen as the place of tranquillity, comfort, and inner peace: a place to ponder and reflect, meditate, or simply to rest the brain.

“I know of women who use their gardens as a sanctuary into which they escape during times of stress.”

Source of enhanced well-being and physical exercise

What separates the concept of a personal garden from the concept of a nature retreat is the added dimension of the act of physically co-creating with nature. A gardener is a creator extraordinaire, always physically interacting with the environment in order to affect a visual result and a tangible product. As such, the act of doing becomes an act of enhancing both physical and mental well-being in addition to providing the physical exertion necessary for increased fitness.

Many of the writers speak of how their well-being is enriched by their involvement with gardens and gardening activities, and how their health has made remarkable improvements at times, as a result of gardening.

“I am sure that gardening has kept me sane, and in better health, over the past 25 years especially.”

“I’m sure the therapeutic benefits of gardening has much to do with my overall sense of well-being.”

Some express the wish that they could spend all of their waking time in the garden, or at least a much greater proportion of time.

Therapeutic tool for stress release

In an increasingly stressful world, perhaps the most beneficial reward from gardening is the outlet it provides for releasing tension and anger that are potentially harmful to overall psychological well-being. This gardening attribute was most frequently cited in the many letters and survey comments as a benefit gained.
“Gardening relieves tension and soothes problems, makes me feel good, almost have withdrawal symptoms if I don’t.”

As more women are combining work outside the home with work at home and other family responsibilities, it becomes clear that an avenue is needed to provide for anger release and stress management. The garden is one such place, if only a small plot or a few containers on a verandah.

“I use gardening as my major stress buster.”

“When my children were young, I used to go out to the garden and do some weeding when I was angry as I felt better after this.”

The above comments and many others received from the respondents give an overall view that concurs with Steven’s findings that the domestic garden has a role to play in meeting human needs. He professes that:

it becomes a resource of immeasurable richness and opportunity with the capacity to satisfy needs well beyond the singular benefits usually associated with gardens and gardening (Steven, 1997, p.300).

No matter what their level of involvement with the garden, many New Zealand women, particularly around the age of menopause, are meeting a large number of their physical, psychological, and spiritual needs through the various aspects of gardening.

IMPLICATIONS FOR HORTICULTURAL THERAPY RESEARCH

The findings from this exploratory study provide a basis for further investigation into the motivations for gardening, the meaning it holds for gardeners, and therapeutic benefits to be derived from it. A more in-depth empirical research design would require a long-term comparative analysis of both a gardening and a non-gardening group, with regular tracking of physical and psychological health parameters. Even with such a design, it would be difficult to exclude extraneous factors that also contribute to overall health and well-being.

While identifying a clear correlation between gardening activities and human well-being is a desirable goal for establishing gardening (i.e. horticultural therapy) as a viable treatment option, a more practical short-term approach is the exploratory study. By analyzing the behavior and motivations of gardeners, an exploratory study can identify the key factors that determine the perceived benefits from gardening. For instance, the three gardener profiles that emerged in this study suggest that gardening serves different purposes for different individuals’ needs. While an extroverted person may seek the comradeship of garden clubs and enjoy exchanging garden experiences, a more introverted or depressed person may crave the solitude of gardening alone or the joy of nurturing a seedling back to health. Some people may prefer relaxing and just “watching the garden grow”, while others who are more anxious may get release from vigorous digging and pruning. This type of information...
becomes especially important when designing HT treatment programs for clients with mental or physical disabilities.

Another useful aspect of the exploratory study is flexibility of design and the ability to explore tangents that may appear over the course of time. This study originally began as a pilot study consisting of personal interviews with local gardeners. As interest in the study grew, a further mail-out survey was conducted to include gardeners from around the country. These gardeners had similar levels of involvement and perceived benefits as the original group, thus validating the importance of gardening to women across New Zealand. Similarly, as the study evolved, the necessity for additional measurements became apparent. Another mail-out questionnaire regarding personality assessment was completed, again providing useful information for constructing the gardener profiles.

Finally, a major consideration when designing an exploratory study is the type of data to be collected. In an empirical study, data collection often focuses on numerical measures that can be quantitatively analyzed without giving equal weight to the importance of qualitative data. Since this study was aimed at examining meanings and benefits of gardening, it was crucial to provide opportunity for respondents to express, in their own words, their motivations and feelings. The qualitative data received in the form of written comments on the surveys and letters added immeasurably to the value of the findings. This rich body of information complimented the emergent trends in the quantitative data and provided substance to the overall results by making the data come alive with concrete examples of how gardening positively effects the lives and well-being of mid-aged women in New Zealand.

CONCLUSIONS

The main findings of this exploratory investigation of mid-aged women gardeners in regards to health benefits and attitudes toward gardening are:

- Physical limitations do not preclude gaining satisfaction and therapeutic or psychological benefits from gardening.
- Women do not see ageing as a barrier to gardening.
- Post-menopausal women exhibit less psychological distress and better mental health than menopausal and pre-menopausal women.
- Passive as well as active involvement in the garden can bring large satisfaction.
- Just a few hours per week spent in the garden can prove beneficial to well-being.
- The most important reasons that women garden are to obtain satisfaction, relaxation and rejuvenation, and inner peace.
- The healthiest gardeners maintain a balance of both relaxing and working in the garden.

While both the quantitative and qualitative data strongly suggested that mid-aged women find satisfaction from gardening at emotional and psychological levels, it is not yet clear if measurable physical health benefits are obtained from gardening. A longitudinal study of gardeners looking at physical and emotional states over time would reveal more thoroughly the extent to which involvement with gardening impacts on overall human well-being.
REFERENCES


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In women reporting a fairly brisk or fast walking pace, bone mineral density at the proximal femur was also significantly and positively associated with the frequency of walking at least a mile. There were no significant associations with aggregate measures of total customary physical activity. This study has identified two forms of physical activity, namely stair-climbing and brisk walking which are associated with increased bone mineral density at the hip and whole body in postmenopausal women. Both are feasible forms of activity for promoting to middle-aged women.

**Benefits of gardening: An exploratory study of mid-aged women in New Zealand.** January 2011. Judith L. Kidd. Women who use HRT scored higher on these subtests than those who do not use HRT. After calculation of a total profile score (adjusting for age and IQ), HRT users score higher than HRT non-users on the RBMT-E overall measure of Everyday Memory. These pilot results suggest that HRT use in this sample is related to enhanced verbal memory in everyday memory tasks and that the RBMT-E may be a useful tool for further work in this area of research.

Menopause is a time in a woman's life when menstruation stops permanently; it is the last stage of a gradual biological process in which the ovar... There has been very little research in New Zealand to date regarding HRT use, and none published in regard to the benefits of use. Exploratory studies can potentially save time and other resources by determining at the earlier stages the types of research that are worth pursuing.

**Disadvantages of Exploratory Research.** Exploratory studies generate qualitative information and interpretation of such type of information is subject to bias. These types of studies usually make use of a modest number of samples that may not adequately represent the target population. Accordingly, findings of exploratory research cannot be generalized to a wider population. Findings of such type of studies are not usually useful in decision making.