A Pilot Study of the Benefits of Traditional and Mindful Community Gardening For Healthy Aging Among Urban Older Adults
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Introduction
- World population is aging and urbanizing
- What contributes to healthy aging in the growing population of city-dwelling older adults?
- Healthy aging conceptualized as physical, social, and cognitive engagement
- Research shows that contact with plants is linked to a variety of psychosocial benefits
- Limitations of the literature: 
  - Atheroretical; Few studies of community gardening;
  - No randomized, controlled trials
- The study of community gardening is in its infancy within the field of psychology

Research Questions
- Is a randomized, controlled trial of community gardening possible?
- Can an urban community gardening intervention with or without mindfulness training enhance well-being among people age 55 to 79?
- If so, are the effects mediated through 3 pathways?
  1) Attention/mindfulness (Attention Restoration Theory)
  2) Social support (Socio-ecological Systems Thinking)
  3) Connectedness to nature (Biophilia Hypothesis)

Method
- Randomized, controlled, pilot study using a mixed methods approach
- Participants: Community-dwelling adults age 55 to 79
- N = 50

Independent Variable - Group assignment
Dependent Variables
- Subjective Well-Being
- Hypothesized Mediators (Attention/Working Memory, Mindfulness, Social Support, Connectedness to Nature)

Flow of the Study
- Pretest
- Assignment to Groups
- Mindful Community Gardening n=17
- Traditional Community Gardening n=17
- Wait-List Control Group n=16
- 2.5 hour Gardening Groups x 9 weeks
- Posttest Assessment
- Individual Interviews With 6 MCG & 6 TCG Participants

Group Descriptions
- Traditional Community Gardening (TCG) - typical gardening activities undertaken collaboratively, e.g., planting, weeding, composting, harvesting
- Mindful Community Gardening (MCG) - a new approach to teaching mindfulness – same gardening activities as in TCG, with guided development of non-judgmental awareness as one gardens, eats, walks, etc.

Feasibility
- A randomized, controlled trial of “quasi” community gardening is possible
- Numerous obstacles were encountered and lessons learned: 
  - Field Study Complications, Attrition/Timing, Differences With “Real Life” Community Gardens

Sample
- Mean age = 63.4 (SD = 5.7), age range = 55 to 79
- 84% female, 86% White
- Physically & psychologically healthy sample – little room for improvement in the average participant
- Underpowered to detect small to medium effects

More Time In Garden (Dose) Improved Subjective Well-Being Outcomes
- Dose predicted higher quality of life at posttest for both MCG and TCG participants
- In TCG, those with a higher dose endorsed less negative affect at posttest than those with a lower dose

Community Gardening Enhanced Mindfulness
- Mindfulness was measured with 2 uncorrelated scales: 1) Kentucky Inventory of Mindfulness Skills – Observing subscale (KIMS), 2) Mindful Attention and Awareness Scale (MAAS)
- MCG increased the “acting with awareness” aspect of mindfulness, as measured by the MAAS. Accounted for 6% of the variance at posttest, compared to WL.
- TCG increased the “observation” aspect of mindfulness, as measured by the KIMS. Accounted for 14% of the variance at posttest, compared to WL.
- The groups did not measurably impact other quantitative outcomes in this small, healthy, high-functioning, pilot sample.

Emergent Hypothesis: Individuals Under the Greatest Stress Benefitted Most From MCG/TCG
- Interviews revealed major stressors faced by participants: health problems, caregiving, bereavement, economic/work problems, marital/family discord, etc.
- These aspects of community gardening groups were cited as most helpful to coping:
  - Mindfulness training
  - Social support
  - Peaceful, restorative atmosphere of garden
  - Direct contact with nature & feeling part of the cycle of life
  - Escape/respite

Reconceptualizing Aging
- Seeing others’ physical limitations increased own acceptance of own functional limitations, which had initially brought shame/embarrassment
- Some looking dimly at the aging process were inspired by others: “There were so many people that still had goals and dreams, still were looking toward to their lives. I thought that was very uplifting. Not everybody at this certain age is getting ready to go sit in a rocking chair.”

Generativity - Continuing To Contribute
- Community gardening offered another way to be a participating, productive member of society
- Provides opportunity to realize how much one knows & sparked desire to share gardening knowledge, experience, and passion with others
- Several interviewees expressed desire to contribute to future generations by starting school-based community gardening programs

Additional Benefits Cited
- Social engagement – When asked what they liked most about being in the gardening group, the #1 response was social interaction/support
- Cognitive engagement – #2 response was learning more about gardening
- Physical activity – moderate activity, learned how to extend it into later years with adaptive tools
- MCG led to finding more enjoyment in daily life: “The walking meditation made an impression. I’ve walked down the street a hundred times and now I say, ‘Oh, look at that! I never saw that before.’ I enjoy walking more. It’s more interesting. It’s not just a means of getting there, it’s an enjoyable act of walking to get there.”

Discussion
- A large-scale, randomized, controlled trial is possible
- Even in a small, healthy, high-functioning sample, benefits accrued
- Most helpful to those with major stressors
- Future studies could be directed at clinical samples to address caregiver burden, depression, cognitive slippage, loneliness, other stress
- Important to make community gardening accessible to less functional individuals who might have greater need and benefit more
- Future research could assess physical activity benefits and nutrition effects
- Traditional Community Gardening could extend the benefits of mindfulness to more people, especially those who’d not otherwise practice
- Mindful Community Gardening offers an approach to teaching mindfulness with unique benefits
- Behavioral medicine specialists are encouraged to pursue community gardening research & practice to promote physical & mental health in an aging, urbanizing population