

Examining the Health Impacts of Community Gardening and Implications for Practice

Advancing the Edible City: Ideas, Practices and Systems, 2nd Edible Cities Network Conference

Barcelona, Spain



RECETAS
TESTING ACTIONS FOR SOCIAL
PRESCRIBING IN NATURAL SPACES

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Overview



- Why approach health and wellbeing through the community garden lens?
- What do we know about gardens' effects on health and wellbeing?
- Can we build on this information to advance public health practice and policy?

A photograph of a community garden. In the foreground, there are several raised garden beds with various plants, including yellow and pink flowers. A concrete path runs along the left side. In the background, there are more garden beds, some with trellises, and a few people standing. The scene is outdoors with trees and a clear sky.

Why approach health and wellbeing
through the community garden lens?

The Health Context

- 60 percent of adults have one or more chronic diseases – diabetes, cardiovascular disease, obesity, liver disease and some cancers (e.g., colon and breast)
- 74 percent of adults are overweight or have obesity
- All these conditions are influenced in part by diet and physical inactivity. Moreover, stress and anxiety play a role in exacerbating health and wellbeing

Physical activity

- Physical activity is also crucial for promoting health and preventing disease.
- Adults should aim to get at least 150 minutes of moderate-to-vigorous physical activity per week
- Increasing physical activity helps regulate some hormones that contribute to certain cancers and helps keep the immune system healthy
- Telling someone to be more active often does not lead to more activity.
- **Engaging someone in an activity they love (and by the way, might lead to more physical activity) probably will work better**



Stress and Anxiety

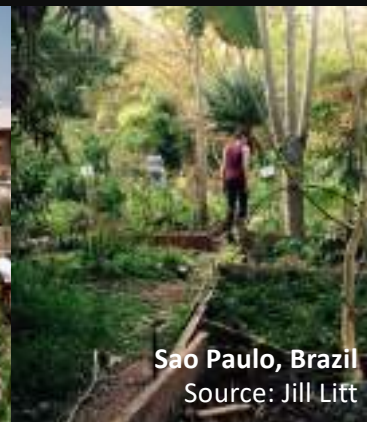
Chronic experiences of stress and anxiety can impact almost every aspect of human health and lead to:

- Increased inflammation
- Weakened immune system
- Changes in heart rate and blood circulation
- Disruptions in sleep
- Metabolic dysregulation
- Digestive problems

Telling someone to be less stressed and less anxious is not enough to change behavior

Solutions that can reduce stress and anxiety are essential to reducing disease risk and promoting health

Community gardens provide a model system to study how nature-based solutions can change behavior and improve health – both physical and mental health



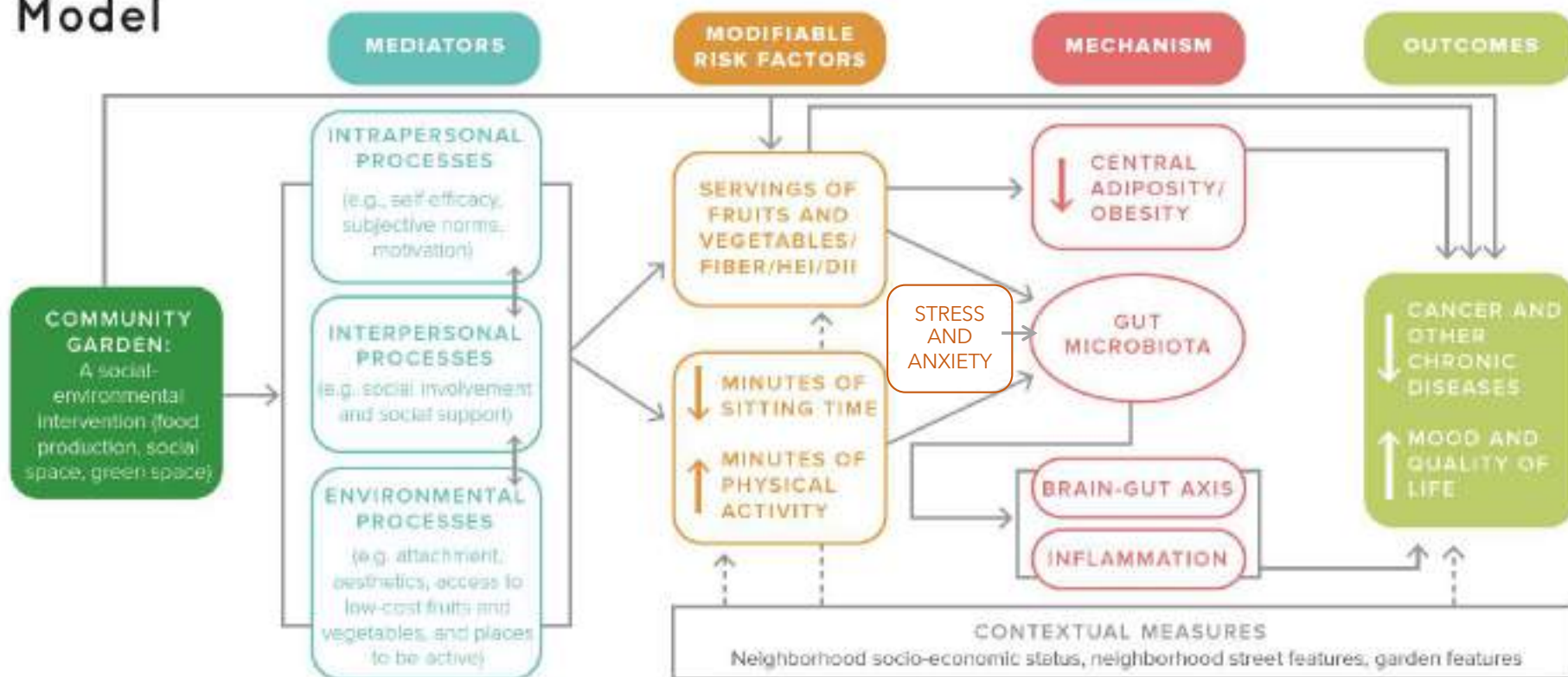
garden communally or side-by-side



What do we know about community gardens' effects on health and wellbeing?

Garden-Health Connection

Conceptual Model



Alaimo et al., 2016; Litt et al., 2018; Demark-Wahnefried et al., 2018; Malberg Dyg et al., 2020; Hume et al., 2022; Litt et al., 2023

Despite 100s of observational, quasi-experimental, and qualitative studies, stronger evidence is needed



A Randomized Controlled Trial of Community Gardening

Funded by American Cancer Society Research Scholars Program

Award #130091-RSG-16-169-01-CPPB

Jan 2017 – December 2022



COMMUNITY ACTIVATION FOR PREVENTION:
A Community Gardening Research Study



- **PI:** Jill Litt (University of Colorado Boulder and ISGlobal, Barcelona)
- **Project Coordinator:** Angel Villalobos (U of Colorado Boulder)
- **Community Partners:** Linda Appel Lipsius, Michael Buchenau, Lara Fahnestock, Denver Urban Gardens
- **Research Assistants/Associates:** Erin Decker, Eva Coringrato, Hannah Buchenau, Pallas Quist, Kylie Harrall, Catherine Erickson, Heidi Kessler, Kristin Lacy, James Hale, Daniel Chase, Abby Bohannon
- **Investigative Team:** Katherine Alaimo, Michigan State University, Deborah Glueck, Department of Pediatrics, University of Colorado School of Medicine; Jenn Leiferman, and Richard Hamman, Colorado School of Public Health; James Herbert and Tom Hurley, U of South Carolina; Kaigang Li, Colorado State University
- **Graduate Students:** Alyssa Beavers, Ashby Sachs, Jimikaye Courtney
- **Funding:** American Cancer Society, U of Colorado Boulder, U of Colorado Cancer Center, USDA NIFA and Michigan AgBioResearch Hatch project MICL02410



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- A two-armed, observer-blinded randomized controlled trial to explore whether community gardening improved cancer preventive behaviors and reduced stress and anxiety among a low income, multi-ethnic adult population
- Allowed us to understand whether the differences in behaviors observed were because of gardening as an intervention rather than the self-selection by gardeners



Key elements to the study

- Conducted RCT in Denver, Colorado between 2017-2020
- Randomised 291 individuals NEW to gardening to either a garden plot (intervention) or waitlist (control)
- Assessed diet, physical activity, body measurements 3X (baseline, harvest season, and 10-month follow-up)
- Gardeners received a garden plot (7 m²), plant starts, seeds, classes, and support






Key Results

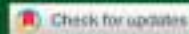
- **Fiber boost** - By fall, those in the gardening group ate, on average, 1.4 grams more fiber per day than the control group—an increase of about 7%
- **More moderate-to-vigorous activity** – the gardening group increased physical activity levels by 42 minutes per week (almost 30% of the way to meeting international health advice)
- **Feeling better** – the gardening group saw their stress and anxiety levels decrease, and importantly, those who came into the study most stressed and anxious saw a greater reduction in their stress and anxiety

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Effects of a community gardening intervention on diet, physical activity, and anthropometry outcomes in the USA (CAPS): an observer-blind, randomised controlled trial

Prof Jill S Litt, PhD   • Katherine Alaimo, PhD  • Kylie K Harrall, MS • Prof Richard F Hamman, MD • Prof James R Hébert, MSPH ScD • Thomas G Hurley, MS • et al. [Show all authors](#) • [Show footnotes](#)

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Summary

Introduction

Methods

Results

Discussion

Summary

Background

Unhealthy diet, physical inactivity, and social disconnection are important modifiable risk factors for non-communicable and other chronic diseases, which might be alleviated through nature-based community interventions. We tested whether a community gardening intervention could reduce these common health risks in an adult population that is diverse in terms of age, ethnicity, and socioeconomic status.

What we learned

- Community gardening, as an example of a nature-based solution, can change behaviors that are important for health
 - > Even for people new to gardening
- These solutions can reach people from diverse backgrounds and circumstances as the effects did not differ by race, ethnicity, age, and sex
- Gardens should be considered a legitimate health expenditure and part of our toolbox for preventing and treating disease, and promoting health
- We need to build on this knowledge to leverage other nature-based solutions in our cities for health promotion and wellbeing



Social prescribing, a non-medical community referral system, could provide a way to bridge nature-based solutions and health promotion and legitimize nature as an antidote to a variety of health conditions



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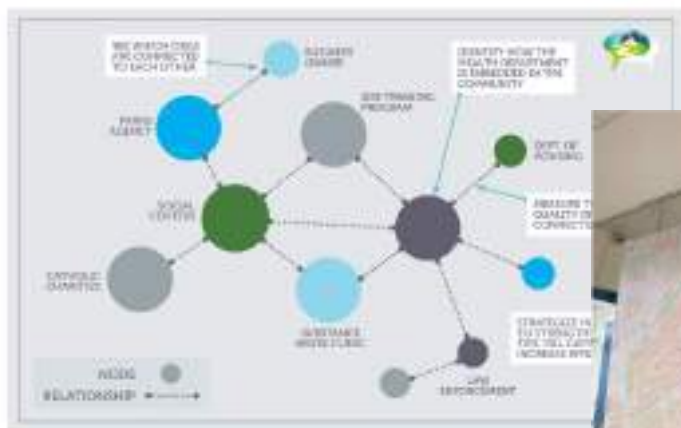
UMIT TIROL THE TYROLIAN PRIVATE UNIVERSITY

Test and validate different nature-based social prescribing (NBSP) solutions in six urban areas – Barcelona, Cuenca, Helsinki, Marseille, Melbourne, and Prague.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 945095

Co-Creation: Engaging Stakeholders to Understand Capacity to Address Loneliness at the Intersection of Nature-Based Solutions and the Care Environment



Social Network Analysis



Community Engagement



Resource Inventory/Menu Creation



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 945095

Testing intervention effectiveness: The scientific approach

A

B

1

Two-arms randomized controlled trial (3)
Or Pre- Post Design (3)



2

Test whether intervention reduces feelings of loneliness* and improves HRQL**

*Gierveld Loneliness Scale

**Sintonen 15D



3

6 cities will deliver intervention

Intervention Components:

1. Facilitated groups (6-8 persons per group)**
2. Individualized session aimed at relationship building
3. 9 group nature-based sessions

**Modeled after Circle of Friends by Pitkala and others



4

Participants will be recruited from clinical and non-clinical settings with an enrollment goal of 1000 participants

Recruitment is now open!



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Actividades en grupo
en áreas verdes de tu ciudad

Para personas de más de 18 años
que quieran mejorar su bienestar emocional

Más información

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Wrap-Up

- The evidence base supporting gardens as a health intervention continues to strengthen
- With strong partnerships, a bit of vision, and determination, gardens and other upstream nature-based solutions can offer “legitimate” ways to promote health and wellbeing
- Solutions must reduce barriers to access due to socioeconomic, demographic, geographic and cultural factors
- Keep in mind the active ingredients – direct participation, time outdoors, social support, group facilitation, and cultural sensitivity
- NBSP may offer a way to bridge medical systems and nearby resources for the promotion of population mental health... stay tuned!



Columbia Land Trust, Unlikely Hikers

Merci! Gracias! Thank you!



Photo Credit: Glenn Asakawa, University of Colorado

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<https://capsmetro.wordpress.com/>

www.recetasproject.edu

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Source Material

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