

Cultivating Healthy and Sustainable Trajectories

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BACKGROUND

- Gardens have been used throughout history to address societal needs of an era. Recently, gardens have gained popularity in the US to address issues related to health, sustainability, individual and community well-being, and more [1,2,3]. However, these gardens have not been rigorously studied to address if, how, and why they are effective in addressing societal needs.
- Gardening requires persistence, planning, accountability, and cooperation with others. These everyday behaviors are related to conscientiousness, a core component of health, well-being, and longevity [4,5].
- By developing and reinforcing responsible, prudent behaviors, gardening may create individuals who engage in healthier and more sustainable behaviors.
- This study scientifically explores the effect of gardening on:
 - Personality
 - Diet
 - Physical Activity
 - Daily Activities
 - Social Relationships
 - Self-Reported Health
 - Quality of Life
 - Well-Being
 - Environmental Behaviors

Table 1

Variable	Garden		Nutrition	
	Time 1	Time 3	Time 1	Time 3
Grit	3.24	3.36	3.32	3.29
Agreeableness	4.02	3.98	3.84	3.80
Extraversion	3.08	3.25	3.47	3.39
Neuroticism	2.85	2.79	2.92	2.87
Conscientiousness	3.43	3.42	3.40	3.36
Openness	3.47	3.51	3.74	3.63
Subjective Happiness	4.89	5.14	4.70	4.71
Self-Esteem	19.22	20.70	19.0	19.18

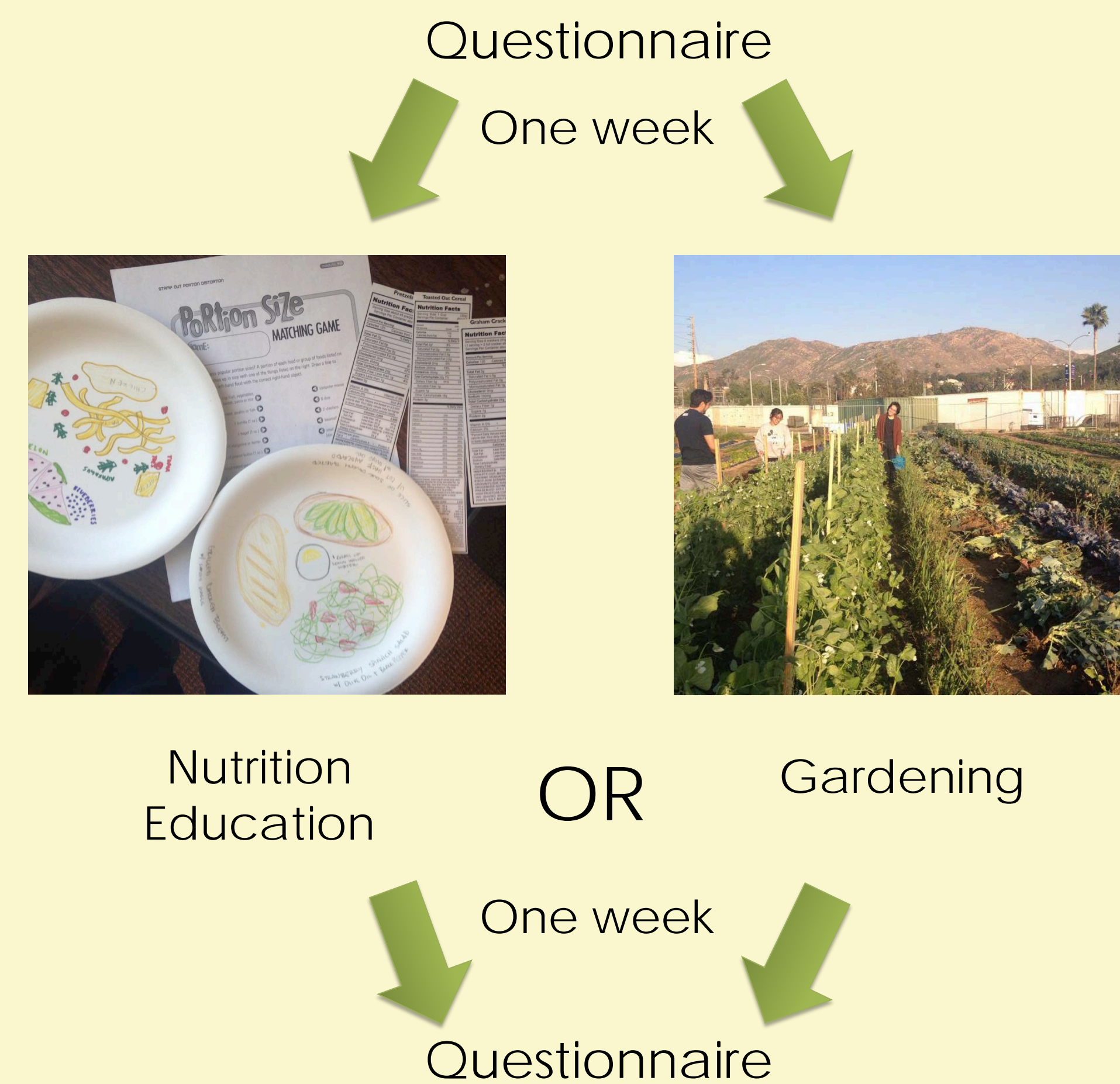
METHODS

Participants

- N = 57, Mean age = 20.16, 58% Female
- Culturally and ethnically diverse (46% Asian American, 26% Hispanic, 9% White, 5% Middle Eastern, 4% Black, and 10% other.)

Method

- Participants came to the lab 3 times:
 - Time 1: Pre-Questionnaire
 - Time 2: Intervention
 - Time 3: Post-Questionnaire
- Participants were randomly assigned to either a 2-hour community garden session or to a 2-hour nutrition education and discussion session



RESULTS

- Females in the gardening group decreased in neuroticism over time (Figure 1).
- Gardeners increased in self-rated health over time (Figure 2).
- Gardeners increased in their willingness to try to fruits (Figure 3) and vegetables (Figure 4).
- Gardeners felt more embedded in their surroundings, though this difference was only trending significance $t(53) = -1.85, p = .07$.
- Overall, we did not find changes for any of the Big 5 traits measured, grit, environmental behaviors, or quality of life for the full sample (Table 1), but there were gender differences.

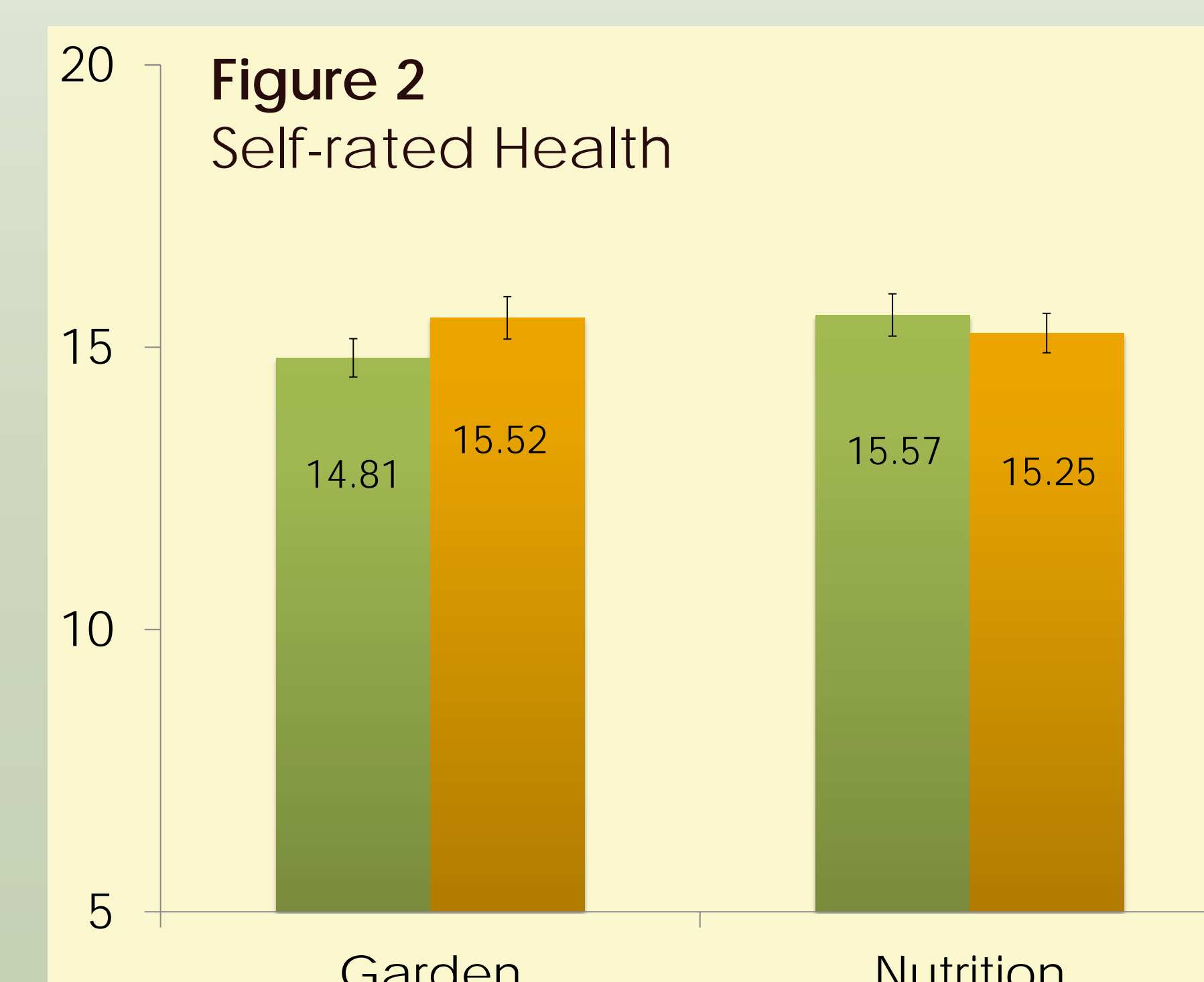
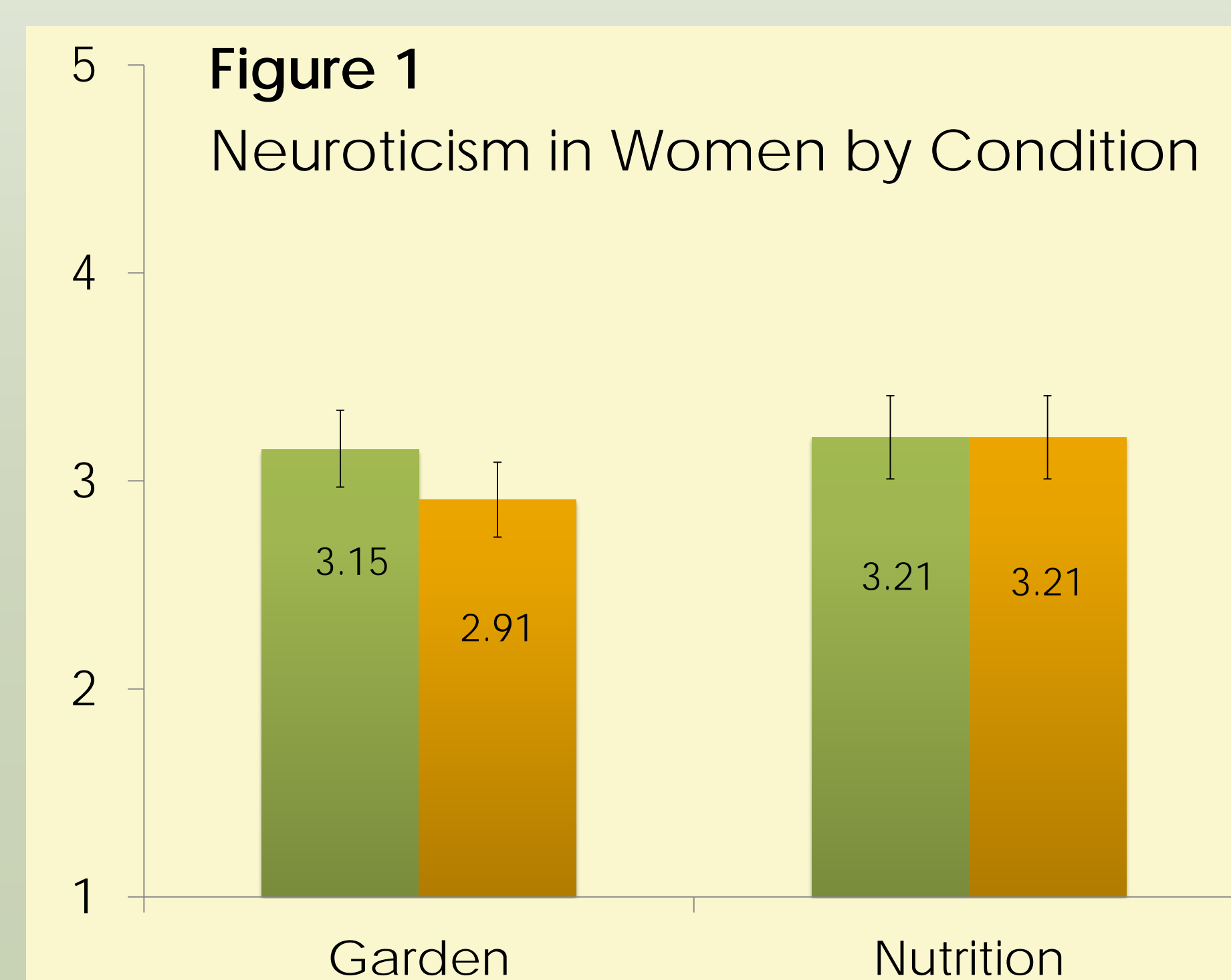


Figure 3

Willingness to Try New Fruits

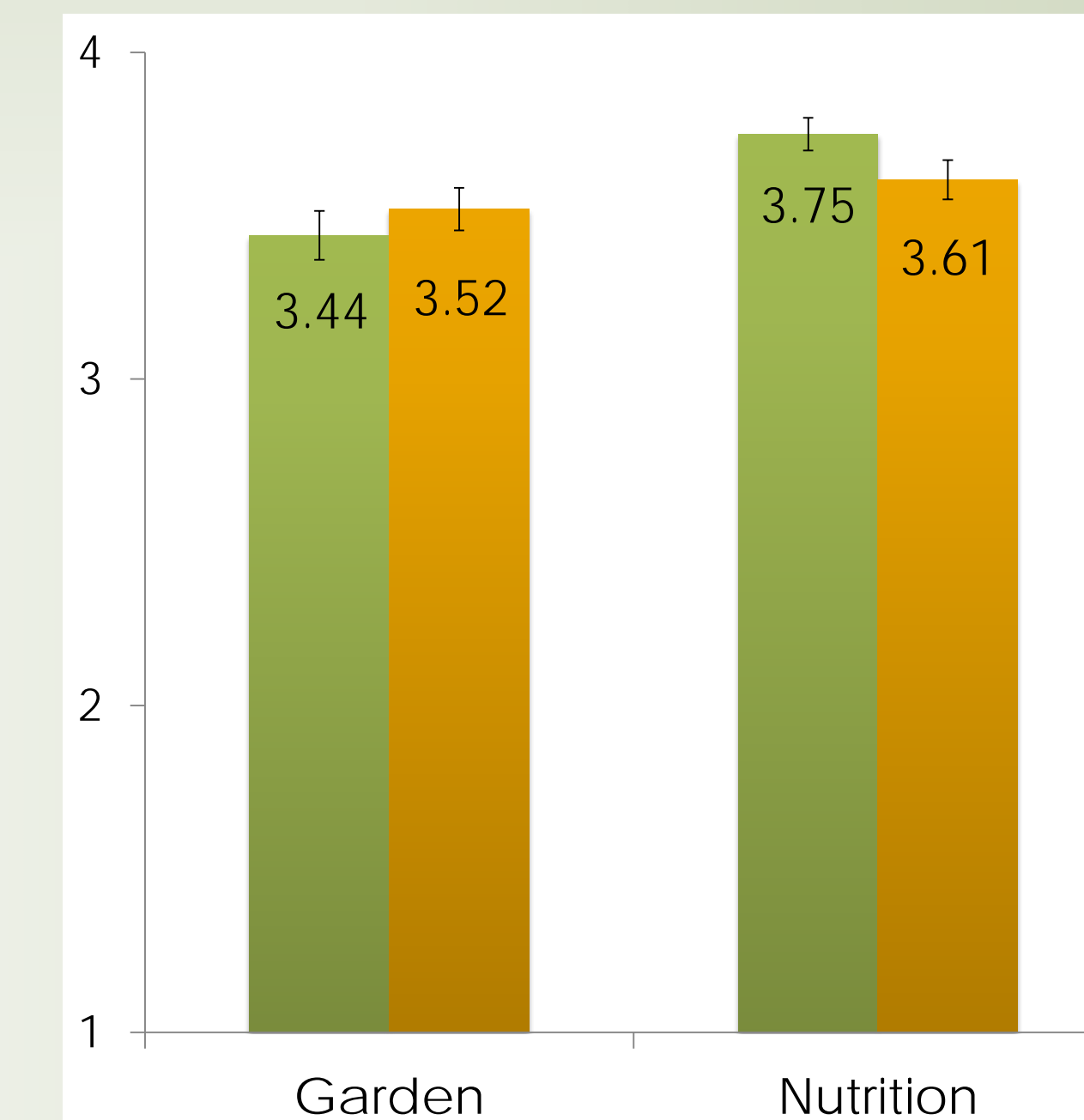
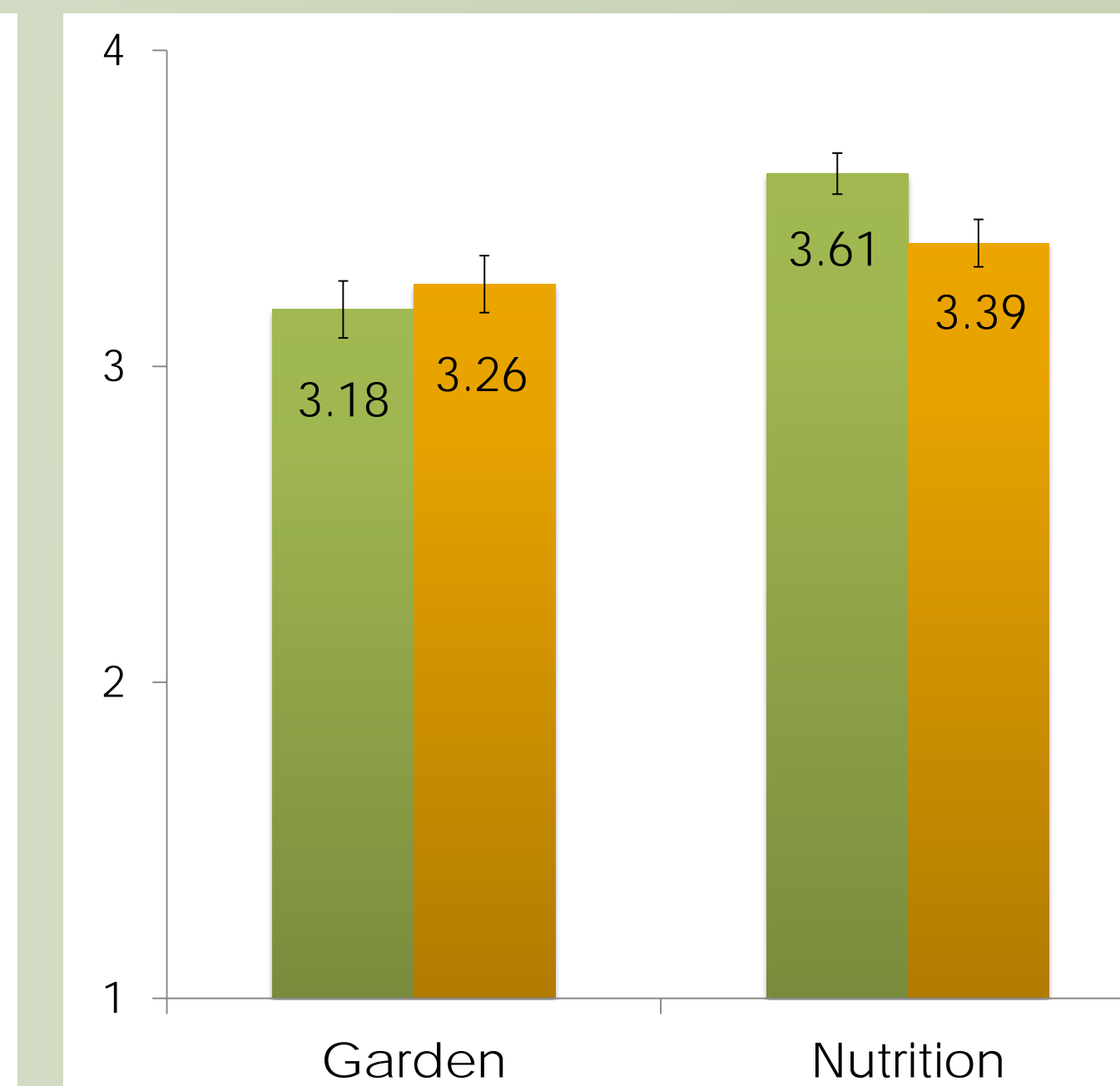


Figure 4

Willingness to Try New Vegetables



DISCUSSION

- Although a body of correlational research and qualitative reports from gardening programs point toward the high potential of community gardens in the promotion of health and well-being, little is known about causal pathways.
- We conducted a fully-randomized study to assess how and why gardening may change health behaviors and feelings of health and well-being. In our study, gardening increased participants' efficacy and willingness to eat healthy foods, suggesting that gardening may beneficially affect health behaviors.
- Future research should address the mechanisms by which gardening may affect health and sustainability behaviors, and in what groups and contexts such an intervention might be successful

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