

Growing More Than Plants in the Reverend Henry Rivera Community Garden¹

Jeff Cherubini, Ph.D.²

Christie González-Toro, Ph.D.³

1. Introduction

As we examine the benefits of urban community gardens in this study, it is important to note that community gardening is not being proposed as a panacea to any one current public health crisis, but rather as a cost-effective opportunity for Lasallian educators and community partners to potentially remedy inequities and “plant the seeds” to improve their own community-wide health outcomes.⁴ With this in mind, it is also important to recognize that with health inequities, and subsequent health disparities, an ecological approach be used to address the variety of individual, social, and environmental factors influencing one’s health.⁵ Utilizing an upstream analysis, ecological thinking focuses on social structures and processes within which health behaviors develop and thus looks to prevent future (downstream) health problems.⁶ With this in mind, both real and perceived challenges from multiple layers of ecology must be addressed when considering factors that influence the health of our diverse communities.⁷

Centering on more than the biological / physical aspects of health, the consideration of social and cultural influences is critical to this ecological public health approach.⁸ Whereas most healthy people have the agency to make their own daily choices, depending on life circumstances and resources available, some have much less choice than others. Hence, we need to account for the plethora of individual, social, and environmental determinants that influence these choices and look for ways to provide more opportunities to make it easier for all people to make healthier choices and live healthier lives.⁹

2. Community Gardening as a Sustainable and Equitable Public Health Resource

Certainly, a perspective that accounts for the complex environments in which we live, work, and play is meaningful when exploring community gardening in the context of public health. Expanding on health in the context of community gardening, Kingsley et al. acknowledge community garden participation as a means to address social determinants of health and improve health and well-being.¹⁰ Similarly, Draper and Freedman note the relationship between community gardens and the overall mission of social work in terms of enhancing the basic needs of all people, especially those that are impoverished and vulnerable.¹¹ Moreover, following their meta-analysis on the benefits of community gardening, Soga et al.¹² note that putting into practice community garden policies would “contribute greatly to redressing health inequalities.”¹³

Indeed, the public health benefits of community gardens are well-documented across physical, emotional, social, and environmental domains of health.¹⁴ Moreover, community garden participation may serve as a means to address social determinants of health and correct health inequities, while improving community health and well-being.¹⁵ Addressing health inequalities, community gardening has the potential to increase physical activity, fruit and vegetable consumption, community engagement, and urban beautification while positively influencing stress, anxiety, depression, cognitive function, body-mass index, and crime.¹⁶

As a tool for health promotion, community gardens have the added benefit of fostering positive multi-cultural relationships.¹⁷ Furthermore, community gardening as a social-environmental intervention may positively influence intrapersonal processes (e.g., motivation and stress relief), interpersonal processes (e.g., social involvement and social support), environmental processes (e.g., connections to nature and aesthetics), and health behaviors and determinants (e.g., healthy eating habits, physical activity, and social connections).¹⁸ Whether it be the physical activity that comes with working the soil, the time spent outside in nature, the social support and networking or eating more fruits and vegetables, community gardening has consistently shown to be a sustainable and equitable public health resource for all.

3. Study of the Reverend Henry Rivera Community Garden

The Reverend Henry Rivera Community Garden, built in conjunction with and adjacent to a new children's playground, is located in southern Yonkers, New York, USA. This urban community is known locally as Lawrence Street and shares a border with the Bronx borough of New York City. With 31% of residents being foreign born, a school system representing 100 different nationalities and cultures, and close to half of all households speaking a language other than English, Yonkers is recognized as one of the most diverse cities in all of New York State.¹⁹ This diversity brings opportunities for community growth and development but also challenges with health and health-care disparities found among racial, ethnic, and other underserved populations.²⁰ With this in mind, State and City government agencies, business leaders, residents, and other local community champions, continue to make investments to improve public health, advance "best-practices" to reduce health-disparities, and make available new opportunities to promote health-equity in the City of Yonkers (e.g., expanding access to health care and health insurance coverage, prioritizing and committing to education, and developing new greenways, parks, and community gardens).²¹ Despite health disparities and health equity challenges, the Yonkers community remains one of the safer, more diverse, accessible, workable, and livable small to mid-sized cities in the United States.²²

The purpose of this study is to qualitatively identify the perceived public health benefits of a newly developed urban community garden from the perspective of local residents. Bridging research to applied work, we hope the data from this study serves a supportive role in the development of new Lasallian initiatives that use community gardens, and the enhancement of green spaces, to help enhance the health of our local communities.²³

Method

While there is a reputable quantity of literature addressing the benefits of community gardening, studies investigating the phenomenon of urban community garden participation from the gardener's own perspective, via qualitative approaches, are still needed and worth pursuing.²⁴ Utilizing a naturalistic approach, with a focus on hearing the "voices of local residents," a qualitative inquiry was used to allow for personal insights into participation, to share gardening experiences, and to provide a guide for future community garden programming.²⁵ Through this qualitative process, the personal insights and shared experiences of local residents have the potential to provide an understanding of their experiences while providing stakeholders with additional evidence to empower future action.²⁶

Data Collection and Analysis

Adhering to protocols established by Rubin and Rubin, qualitative interviewing, directed by an interview guide, was the primary source of data collection.²⁷ Semi-structured interviews focused on: the nature of activity within the garden (e.g., how participants used the garden), social interactions (e.g., relationship building), health impact (e.g., how the use of the garden affected participants' health and well-being), processes of change (in what specific ways did the garden have an effect), and supports used and challenges faced during the gardening season (e.g., access and safety). Participants were given the option of sharing in a Spanish or English language interview. All interviews were digitally recorded and transcribed verbatim. Following grounded theory methodology, a line-by-line analysis was conducted in which data found to be connected in meaning and / or similar in nature were grouped into categories.²⁸

Participants

Participants were recruited via in-person and posted announcements within the community garden space, as well as in collaboration with the local garden coordinator. All participants were 18 years of age or older, residents of Yonkers, New York, and members of the community gardening program or residents living in the local community. Institutional Review Board (IRB) approval was obtained, and all ethical protocols were followed throughout the study process (e.g., informed consent). Interviews lasted approximately 30 minutes and were conducted within the garden at the end of the first growing season.

A total of nineteen participants were interviewed including Reverend Henry Rivera Community Garden program members and other local residents who have had direct personal contact with the garden space (e.g., neighbors living adjacent to the new space). Garden members (n = 10) ranged in age from 32 to 80 years (M = 52.2, SD = 14.8) and self-identified as Black or African American (n = 2) and Hispanic or Latinx (n = 8). Additional community members (n = 9) ranged in age from 40 to 76 years (M = 55.7, SD = 13.3) and self-identified as Black or African American (n = 1), Hispanic or Latinx (n = 6), and White (n = 2).

4. Results and Discussion

As noted previously, the purpose of this study was to qualitatively identify the public health benefits of community garden participation from the perspective of the participants themselves. Categories of perceived health impact include: (a) physical health behavior, (b) mental health, (c) social health, and (d) environmental health.

Physical Health Behavior

It was not expected that participation in a single summer gardening season would provide evidence of an immediate impact on physical health outcomes (e.g., improved cholesterol levels) but rather that participation would provide evidence of a direct perceived impact on physical health behaviors, which when sustained over time may influence outcomes. Sub-categories of physical health behaviors include healthy eating and increased physical activity.

Healthy eating. It is well established that community gardening programs contribute to increased fruit and vegetable intake of gardeners.²⁹ Connected to these results is the distinct role community gardens play in increasing opportunities for healthy eating at the local level.³⁰ This gardener's description of the impact on healthy eating stands out as one of the participants also speaks to challenges with access to organic foods as well as cultural connections within their community.

You feel like you are eating organic food because when we buy an organic tomato you don't know if they put wax on the tomato. Vegetables in the garden do not have wax, they have soil. I say those are the true organic products. I try to buy organic food but it is very expensive, I can't afford it. It is healthy to eat vegetables from the garden, we share products. Sometimes members tell me "you can cook this plant like spinach." Because sometimes there are vegetables that are not cultivated in our countries.

Increased physical activity. Whereas specific measures of duration or intensity of physical activity were not assessed in this study, participants discussed the positive impact of gardening on their physical activity levels. Increased walking was by far the most frequently mentioned physical benefit connected to this new urban garden. This increased physical activity, via walking, was best described here:

... well I walk down here most of the time ... it's a nice little ten minute walk, just walk, and some of the time, most of the time I'll walk. If my fiancé meets me out here, we walk around to her place ... and by the end of the day I would walk a mile, so it helps physically.

Another gardener observed,

The garden makes you come to walk around to enjoy nature. This part of the area was not appealing before. This was an area that you wanted to stay away from ... Now you want to see and enjoy.

With an appreciation for the amount of physical activity that can come with gardening, this gardener humorously shared, “Well, I like it because you exercise, you sweat, mosquitoes bite you, the children get dirty and then you have to go to do laundry.” Via increased walking to and from the garden and time spent “with the soil,” participants are able to use gardening as an accessible substitute for traditional forms of physical activity and exercise.³¹

A theme found throughout these results is the co-benefit of the garden being located adjacent to the playground. This shared space appears to not only add to the motivation to visit the garden, but further contributes to a variety of community-wide health benefits. One participant observed the co-benefit to physical activity:

The kids, parents chasing their kids, or help pushing on the equipment ... pushing on the swings ... well they are walking to the park because it's not like many houses are around so they are coming down ... down the hill and around the corner or maybe come from across where the seniors are, so they are walking over here.

Mental Health

All of the participants mentioned, in one way or another, improved mental health as a primary benefit connected to their community gardening experience. Interestingly in this study, the mental or holistic health benefits are perceived to outweigh the physical benefits. This does not necessarily supersede or diminish the physical health benefits, as physically participating in outdoor gardening activities (e.g., planting, growing, weeding, and enjoying nature) is acknowledged as benefiting the mental health components.³² Sub-categories of mental health include stress reduction and cognitive learning.

Stress Reduction. There was overwhelming agreement amongst participants regarding the perceived immediate impact of this first garden season on stress levels. Compiling responses, participants felt “very well, peaceful,” “better than before,” “a lot happier,” “much better,” with “space to think” and stress levels “at the garden about a three and outside about at eight,” “because you come to sit and start talking to people, you forget your problems.” One gardener described, “Great relaxation ... just come, mess with the garden, mess with the plants, pull weeds, just relax, sit down and watch kids play. Yeah, it's food for the brain.” This further speaks to the benefits of aesthetics and contact with nature on mental health.³³

Cognitive Learning. Yet another way in which community gardening can benefit mental health and well-being is through the informal and formal learning that takes place within the garden itself.³⁴ “I learned a lot from gardening” was a consistent theme among participants. Since gardening requires some level of base-knowledge, providing this education is imperative for gardeners (and their garden beds) to thrive. One gardener related the following account,

At the beginning I did not know how to sow, it was challenging to obtain information for better results. [The garden coordinator] has always helped me. I have also had to use Google to get the answers, that has helped me grow and now, I can have a large farm because I have a lot of knowledge.

Participants also commented on the significance of lifelong learning occurring through their gardening activities. Other gardeners reflected upon their experiences teaching their own children and grandchildren. “My granddaughter comes with me and she enjoys seeing the plants, I teach her what is a tomato and what is a garden. I also teach her how to plant seeds.” The teaching and learning dimensions of mental health also interact with dimensions of social health (i.e., enhanced social connectivity) further influencing enjoyment and overall well-being.

Interestingly, as suggested here, not all learning taking place in the garden space revolves around garden-specific content knowledge. Participants further reflected upon the garden’s combined influence on mental health (e.g., lifelong learning) and social health (e.g., cross-cultural connections). One participant commented,

... we are talking about a place for people to be a citizen, they come here [the garden], learn English as a second language. Even Spanish, some English speaking they want to learn Spanish.

Another participant reflected upon trips to the public library to learn how to speak Spanish with new cross-cultural connections being formed as a result of this.

I am friends with [names removed]. They talk in Spanish, and I get by with what I can with the Spanish books I take home from the library to try to do what you can to learn Spanish...I have fun. It’s a good thing. I like getting in with them, which is funny. You get to meet people, which is funny.

One gardener’s perspective on the combined impact of stress reduction and cognitive learning further contributes to cross-cutting themes of economic influences on health disparities, location of the garden, physical activity, and family benefits.

It has helped me a lot with the stress. I am a single mom, sometimes I don’t have money to take the child out to buy things. They burn calories, they play, they come home tired. It is not the same as having a child eating and watching television.

Be it planned curriculum or gardening practices being passed along within families or between members, through community gardens, community members of all ages have the opportunity to learn about local cultures, community diversity, and environmental activism.³⁵ Our results support community gardening’s almost immediate influence on mental health through stress reduction processes and this informal cross-cultural and inter-generational learning.

Social Health

Community gardens and their associated green spaces have the potential to cultivate health, diversity, engagement, and connectivity.³⁶ These positive social influences on individual and community health may occur through processes of mutual trust, interaction, engagement, connection, community building, and reciprocity.³⁷ Sub-categories of social health within our results include social connectivity, social support, community engagement, and cross-cultural connections.

Social Connectivity. Participants emphasized enhanced social connectivity and an increased sense of community. The following narrative provides a description of the perceived benefits of community gardening on social connectivity while also speaking to cultural divisions.

It's people that are coming together ... it's people that I never known lived in this community. We probably would have never even met if it wasn't for this garden. Or my godson probably wouldn't have met some of these kids if it wasn't for this playground. So it's bringing people together, it's what we are trying to do as a nation. We are trying to come together, and it seems like the more we are trying to come together it's being divided. So we need everything that we can do to bring it together... so that's what it's about – togetherness.

Others shared similar stories of improved social connections, be it connecting about garden activities or simply a friendly “hello.” For one gardener, the friendships formed appear to have had a lasting impact: “Ever since I started coming here or if they see me in the neighborhood, they say ‘hi.’ Friendships turn into families sometimes.” Another gardener concisely summed up the enhanced social connectivity: “We talk more. We are more united.”

Unfortunately, not all participants choose to engage with others and nurture the same level of social connection. “I don't really talk to anybody, I just stay to myself.” This outlook may speak to the need to explore additional inclusive social programming options to ensure all members, the extroverted and introverted, are given opportunities to benefit from the social aspects of gardening.

Community Engagement. This increased social connectivity in turn influences community engagement (e.g., members respecting, collaborating, sharing, and looking out for each other).³⁸ Our results support community gardens as providing ample opportunities for gardeners to develop valuable social bonds and enhance community engagement. In reference to local residents and the positive social environment being formed within and around the community garden, one participant exclaimed: “I love this community!” Inserting multi-generational benefits, and delivered with an equal amount of enthusiasm, this participant asserted:

I believe that the community gardens help all types of families, young and seniors. Seniors love to plant. This is something that is helping people to not be at their home depressed looking at the ceiling. Now, they can go out to plant ... Or do something!

Organization and leadership experiences found within urban community gardens are certainly a needed and important component in building civic engagement at the local level.³⁹ Connecting to this and relating to a desire to help within the community, one participant shared the following:

... trying what we can [to get people out of the house] ... especially when people want to have a meeting to get together, we attempted to organize a neighborhood watch, to talk about the needs of the community.

Social Support. Community gardens have shown the potential to create supportive social networks in which participants can rely upon each other in times of need.⁴⁰ Building off of increased social interactions and enhanced levels of community engagement, social support as a theme was consistently evident throughout the interviews. The social support found in the garden was often seen as being quite helpful “because we have communication, when they [other gardeners] do not go to the garden we help each other and if the person can’t water the plants we do it for them.” Another participant commented that she helps “[a neighbor] watering his plants. I plant seeds for him because he has cancer.” Several participants commented on newly formed friendships and the support that stems from these social interactions.

Cross-Cultural Connections. As noted above, participants in this study reflected upon cross-cultural connections being formed, and learning taking place, as a result of their social engagement within and around the new garden space. Indeed, community gardens provide safe spaces and social opportunities for cross-cultural, and even cross-generational, connecting, sharing and learning.⁴¹ Be it studying Spanish to speak with newfound friends in the neighborhood, learning English to further communicate with other garden members, or asking questions about the produce being grown in the garden, participants appear to be embracing the diversity found in the community. One participant, celebrating this diversity, noted the new space attracting people from “different backgrounds, different ethnicities, races, all people, everybody’s coming here ... Indian families, Spanish families, African American families, everybody’s enjoying.”

Further embracing cross-cultural connections being developed within the garden, another participant commented,

It is good for everyone, you meet people from other countries and you learn about food from other countries. Yesterday, I met a Honduran woman, she brought rice with sausage.

These connections and shared gardening experiences appear to extend beyond the garden.

I’m seeing more people help each other out. They may not know certain things and the language too ... a lot of people don’t speak English and there are other Spanish speaking people in the area, they may talk to them and explain things to them and help them be a part of the community.

As evident here, a community garden, when established as a safe and supportive space, has the potential to enhance positive social connections between people of different racial and ethnic backgrounds.

Environmental Health

Community gardening, in conjunction with other environmental initiatives, has been found to not only improve civic engagement, but also to revitalize otherwise abandoned or distressed urban spaces.⁴² Evident in our results, contact with nature in this urban green space, and the associated

physical, mental, and social impacts on health, appear to benefit overall perceived well-being. Sub-categories of environmental health include both beautification and safety.

Beautification. Tying together the social health impact of social interactions, social support, community engagement, and cultural connections with the changes in the physical environment, one local resident observed:

The most impressive thing is the beautification of the community, the community looks beautiful and united. You interact with people that you didn't know before, we have something in common which is to take care of the garden and the area. We must take care of the area that corresponds to us. It is made for people who want to make good use of it. It has not been easy to maintain order, but it is being treated and the results have been visible ... The air is different, you breathe fresh air. People who are drinking [alcohol] in the area are part of the community and now have something to distract themselves. They also need and have found an opportunity, because many people reject them. One of them has a bed and it is one of the most beautiful. Everyone is welcome!

Participants also perceived positive changes to the surrounding neighborhood: "I see a lot of houses being repaired, roads being repaired, which is nice, and the park and neighborhood. Now they have the garden, it warms my heart." Interestingly, the phrase "warms my heart" was repeated in the same context by another participant,

... for me, seeing everything just manifest, just seeing everything warms my heart because this is beautiful, beautiful, so many trees, so many things that they can experience.

Expanding on the beautification theme, participants noted the new "green space" as being both therapeutic and health enhancing. Reflecting upon an initial birds-eye view of the space following the site's first cleanup, one participant commented,

The green, the first thing I saw when we did the cleanup was the green from Saratoga looking down here on Lawrence ... It made the environment much more accessible to green, green space, because when you only just see buildings, then you have what I called it a lost land over here ... all these trees, nature here, you hear the birds, it's like you open up a whole new lost land.

Reflecting on the newly established green space, participants commented on the abundance of litter that had once occupied the garden space noting, "This place used to have so much litter." With this in mind, one participant noted the need for community-wide contributions to keep the space clean and safe for neighborhood children.

... it comes back to everybody wanting it to succeed, chipping in to do what they can cause like when I come here and see things on the ground I may pick it up and put it in the garbage or if I see people throwing things on the floor I would say there's a garbage right there put it in the garbage. Again, we try to keep everything nice for the kids.

Relative to participants' calls to "keep everything nice," it is well-documented that the aesthetics of the space itself (e.g., being clean and green) enhances community engagement, adds to the therapeutic merits (e.g., stress reduction), and improves overall health and well-being.⁴³

Being that this was the garden's first season, and thus a new learning experience for all involved, the economic impact of the garden on the community was not specifically addressed (e.g., savings associated with growing your own food or increased property values). However, gardeners did make note of a variety of co-benefits of beautification, connections to nature, and economic factors in terms of use of the space and access to healthy foods. As one gardener summarized, "It helps us to save money because we can eat natural products."

Safety. Connected to social and physical environmental improvements, community gardens may further promote health and well-being through their impact on neighborhood safety and security.⁴⁴ Participants noted the profound impact the change of space has made on the community and, specifically, perceptions of safety. Emphasis added in the quote here indicate the participant's verbal emphasis when sharing these insights.

This park, this garden, this space has made this community, it's not a bad place to be but it's made it *a lot* [emphasis added] safer. I've seen *a lot* [emphasis added] less police activity. It seems like even some of the people that do stuff that's not so good, they seem to respect that the kids are here, so that's one good thing ... and it's getting better, it's getting better ... I've seen this area, that's probably one reason I didn't come around this way a real lot. You know, but I've seen it since this park has been here, it's changed, it's changed, and it's changing every day.

This idea of the community now keeping an eye out for one another was brought up more than once in the interviews. Further expanding on the garden's impact on neighborhood beautification, safety and the behavior of some local residents, one gardener went on to say,

What changed the most ... this was a drug-infested area, guys were out here ... guys were drinking, getting high, day and night. I heard some other stuff going on I never seen, but I've seen the drug part. And they took that away ... when you do something that's positive and maybe if they see something positive being done, then maybe be like "Oh you know what, they doing something good over there, let me just stay away. Okay I'm not doing nothing to help them, but may not do nothing to hurt the situation" ... They're respecting the change.

Views relating to "respecting the change" appeared elsewhere in the interviews. As one gardener observed,

The only thing is that there are people that do not respect. Before there was this ... there were more people there [pointing to a picnic table where two local residents were just recently drinking alcohol out of a brown paper bag]. Now you can see more children having fun.

For some, there is still room for improvement in terms of neighborhood safety. As one gardener added, “There are many people who use drugs and drink. It has always been like this before and after the garden project.” Addressing the improved safety in the space, another gardener remarked, “Well, before people stayed in the area drinking beers and that is not good for children.” Clearly to the participants in this study, the garden space has improved safety in and around the new park area.

The following narrative recaps many of the above themes and speaks to the collaborative efforts of garden members, residents, city officials, and local police proactively working together to address neighborhood security issues and keep the garden and playground safe.

There was the incident with the dog [in reference to an incident just prior to the garden opening in which an unleashed dog attacked and killed another dog in the garden space], but you know that was quickly remedied and the police are working with us, the Captain is. They installed cameras so that helps a lot. And then like I said with other people looking out for the park, people in the neighborhood, and they keep an eye and ears out for what’s going on. And if anything happens we can find out from the neighborhood. They are more willing to help because it’s a good thing ... It feels safe.

In addition to the hard work of residents and local community champions, much time and effort on the part of numerous public and private organizations and agencies is still needed to bring together the necessary resources to develop, bring to fruition, and maintain thriving community gardens.⁴⁵

Echoed throughout this research, community gardens have the potential to serve as small sanctuaries within larger urban environments; providing residents with opportunities to reclaim, refresh, and protect not only the physical environment but also their own health and well-being.⁴⁶ This “win-win” for both individual and environmental health fits well within a public health approach and further supports the efficacy of community gardening as a public health resource.

5. Concluding Comments

We conclude, based on first-hand accounts in southern Yonkers, New York, that opening up a new community garden is indeed one positive step toward a healthier community. As a result of this research, we have “shared the stories” of these new garden members and other local residents. As Lasallian educators we hope others learn from these experiences and, in turn, advocate for and support the long-term sustainability of community gardens, playgrounds, and green spaces in this and other communities.⁴⁷

We are also aware that our research may have limitations. The participants who agreed to contribute collectively to this study represented the “more engaged” members of the garden program and local community. While this may imply selection bias or effect, the goal of the research was to learn from the first-year experiences of those that actually participated or first-hand witnessed changes in the community. Thus, the sample accurately represents the intended population. Lessons learned from other members who did or did not actively participate in the program, or were more hesitant to be interviewed, would indeed be in order for future research.

With this, and given the small sample size, caution must be exercised when generalizing experiences found within this one urban garden to larger populations.

One notable cross-cutting perspective from participants in this study was the perception that “we are all in this together.” Although urban community gardens are not immune to current social and economic realities, they have consistently been found to serve as an effective health promotion tool with the capacity to mediate health inequalities found within local communities.⁴⁸ With this said, we are not suggesting community gardens as a panacea to any one current public health crises, but rather as a value-added local level public health resource. Whereas community gardens may help in limiting surface-level health disparity challenges (e.g., access to healthy foods and accomplishment of daily physical activity), they may also serve a much more influential public health role, that of “building community.”

With research taking an ecological perspective to public health, the relationships that exist within this southern Yonkers community are more complex than can be described in this initial investigation. With this in mind, and based on our results, urban green spaces, especially those that combine gardens and playgrounds, certainly have the potential to positively impact multi-cultural and multi-generational health. As one community champion passionately concluded,

Effect is hope, and I said that from the beginning. It gives people hope that when they see change, positive change in their community, they see redevelopment and things going on all around them; but when they see it in their area, there is hope.

¹ This research was made possible in part due to the support of the New York State Department of Environmental Conservation’s Office of Environmental Justice and the Community Impact Grant C00736GG “From Vision to Reality: The Yonkers Greenway Community Park.” The funder had no role in the study design, data collection and analysis, decision to publish, or preparation of the manuscript; and the authors have no known conflicts of interest to disclose.

² Jeff Cherubini is a Professor of Kinesiology at Manhattan College. His area of expertise within kinesiology is the psychosocial aspects of physical activity, exercise, and sport. Other interests include physical activity and sport as a means to improve and sustain local / global health, economies, and the environment.

³ Christie González-Toro is an Assistant Professor of Physical Education in the Department of Kinesiology at Manhattan College. Her research involves the relationship between the members of the student teaching triad, e-cigarette prevention curriculum, and community gardens as a central public health role.

⁴ Brothers of the Christian Schools, *Declaration on the Lasallian Educational Mission: Challenges, Convictions, and Hopes* (Rome 2020, page 99): “The possibilities of Lasallian education are enormous for the creation and strengthening of educational proposals for ‘ecological citizenship’ (*Laudato Si*’, 211).”

-
- ⁵ Jeff Cherubini and Mark H. Anshel, “Alternative Models of Health Behavior Change” in *Applied Exercise Psychology: The Challenging Journey from Motivation to Adherence*, edited by Selen Razon and Michael L. Sachs (New York, NY: Routledge / Taylor & Francis Group, 2018).
- ⁶ Jeff Cherubini and Mark H. Anshel, “Alternative Models of Health Behavior Change”; and Irene H. Yen and S. Leonard Syme, “The Social Environment and Health: A Discussion of the Epidemiologic Literature” in *Annual Review of Public Health* 20 (1999), pages 287-308. Retrieved from <https://doi.org/10.1146/annurev.publhealth.20.1.287>.
- ⁷ Jeff Cherubini, “Adult African American Women’s Perspective on Influences That Affect Their Physical Activity Involvement” in *Physical Activity* 3, no. 1 (n.d.), page 13; and Shiriki Kumanyika, “Minority Populations” in *Compliance in Healthcare and Research*, edited by L. E. Burke and I. S. Ockene (Armonk, NY: Futura, 2001), pages 195-218.
- ⁸ Tim Lang and Geof Rayner, “Essay: Ecological Public Health: The 21st Century’s Big Idea?” in *British Medical Journal* 345 (2012), pages 17-20; and Marion Tharrey, Marlène Perignon, Pascale Scheromm, Caroline Mejean, and Nicole Darmon, “Does Participating in Community Gardens Promote Sustainable Lifestyles in Urban Settings? Design and Protocol of the JArDinS Study” in *BMC Public Health* 19, no. 1, (2019), page 589. Retrieved from <https://doi.org/10.1186/s12889-019-6815-0>.
- ⁹ Jeff Cherubini and Mark H. Anshel, “Alternative Models of Health Behavior Change.”
- ¹⁰ Jonathan Kingsley, Emily Foenander, and Aisling Bailey, “‘You Feel Like You’re Part of Something Bigger’: Exploring Motivations for Community Garden Participation in Melbourne, Australia” in *BMC Public Health* 19, no. 1, (2019), page 745. Retrieved from <https://doi.org/10.1186/s12889-019-7108-3>.
- ¹¹ Carrie Draper, and Darcy Freedman, “Review and Analysis of the Benefits, Purposes, and Motivations Associated with Community Gardening in the United States” in *Journal of Community Practice* 18, no. 4, (2010), pages 458-492. Retrieved from <https://doi.org/10.1080/10705422.2010.519682>.
- ¹² Masashi Soga, Kevin J. Gaston, and Yuichi Yamaura, “Gardening Is Beneficial for Health: A Meta-Analysis” in *Preventive Medicine Reports* 5 (November, 2016), pages 92-99. Retrieved from <https://doi.org/10.1016/j.pmedr.2016.11.007>.
- ¹³ Soga et al., “Gardening Is Beneficial for Health: A Meta-Analysis,” page 98.
- ¹⁴ Draper et al., “Review and Analysis of the Benefits, Purposes, and Motivations Associated with Community Gardening in the United States”; Soga et al., “Gardening Is Beneficial for Health: A Meta-Analysis”; Alyssa W. Beavers, Ashley Atkinson, Wenjuan Ma, and Katherine Alaimo, “Garden Characteristics and Types of Program Involvement Associated with Sustained Garden Membership in an Urban Gardening Support Program” in *Urban Forestry & Urban Greening* 59 (2021): N.PAG-N.PAG [Retrieved from <https://doi.org/10.1016/j.ufug.2021.127026>]; Victoria Egli, Melody Oliver, and El-Shadan Tautolo, “The Development of a Model of Community Garden Benefits to Well-Being” in *Preventive Medicine Reports* 3 (April, 2016), pages 348-352 [Retrieved from <https://doi.org/10.1016/j.pmedr.2016.04.005>]; David McVey, Robert Nash, and Paul Stansbie, “The Motivations and Experiences of Community Garden Participants in Edinburgh, Scotland” in *Regional Studies, Regional Science* 5, no. 1, (2018), pages 40-56 [Retrieved from <https://doi.org/10.1080/21681376.2017.1409650>]; Mary L. Ohmer, Pamela Meadowcroft, Kate Freed, and Ericka Lewis, “Community Gardening and Community Development: Individual,

Social and Community Benefits of a Community Conservation Program” in *Journal of Community Practice* 17, no. 4, (2009), pages 377-399 [Retrieved from <https://doi.org/10.1080/10705420903299961>]; Ellen Teig, Joy Amulya, Lisa Bardwell, Michael Buchenau, Julie A. Marshall, and Jill S. Litt, “Collective Efficacy in Denver, Colorado: Strengthening Neighborhoods and Health through Community Gardens” in *Health & Place* 15, no. 4, (2009), pages 1115-1122 [Retrieved from <https://doi.org/10.1016/j.healthplace.2009.06.003>].

¹⁵ Soga et al., “Gardening Is Beneficial for Health: A Meta-Analysis”; and Kingsley et al., “You Feel Like You’re Part of Something Bigger’: Exploring Motivations for Community Garden Participation in Melbourne, Australia.”

¹⁶ Soga et al., “Gardening Is Beneficial for Health: A Meta-Analysis”; Egli et al., “The Development of a Model of Community Garden Benefits to Well-Being”; David McVey et al., “The Motivations and Experiences of Community Garden Participants in Edinburgh, Scotland”; and Luke Drake, and Laura Lawson, “Results of a US and Canada Community Garden Survey: Shared Challenges in Garden Management amid Diverse Geographical and Organizational Contexts” in *Agriculture and Human Values* 32, no. 2, (2015), pages 241-254.

¹⁷ Draper et al., “Review and Analysis of the Benefits, Purposes, and Motivations Associated with Community Gardening in the United States.”

¹⁸ Beavers et al., “Garden Characteristics and Types of Program Involvement Associated with Sustained Garden Membership in an Urban Gardening Support Program.”

¹⁹ City of Yonkers, “Yonkers Demographics,” accessed June 24, 2022, <https://www.yonkersny.gov/work/demographics>

²⁰ New York State Department of Health, “City of Yonkers: Health Equity Report 2021,” accessed June 24, 2022, https://www.health.ny.gov/statistics/community/minority/docs/mcd_reports_2021/westchester_county_city_of_yonkers.pdf

²¹ New York State Department of Health, “City of Yonkers: Health Equity Report 2021”; City of Yonkers, “Priorities and Initiatives 2020,” accessed June 24, 2022, <https://www.yonkersny.gov/government/mayor-s-office/priorities-issues>; and Groundwork Hudson Valley, “Trails: The Yonkers Greenway,” accessed June 24, 2022, <https://www.groundworkhv.org/programs/transforming-places/the-yonkers-greenway/>

²² City of Yonkers, “About Yonkers,” accessed June 24, 2022, <https://www.yonkersny.gov/live/about-yonkers>

²³ Brothers of the Christian Schools, *Declaration on the Lasallian Educational Mission* (page 99): “Our efforts at education will be inadequate and ineffectual unless we strive to promote a new way of thinking about human beings, life, society, and our relationship with nature (*Laudato Si*, 215).”

²⁴ Søren Christensen, “Seeding Social Capital? Urban Community Gardening and Social Capital” in *Civil Engineering and Architecture* 5, no. 3, (2017), pages 104-123 [Retrieved from <https://doi.org/10.13189/cea.2017.050305>]; Daniel R. George, “Harvesting the Biopsychosocial Benefits of Community Gardens” in *American Journal of Public Health* 103, no. 8, (2013), e6 [Retrieved from <https://doi.org/10.2105/AJPH.2013.301435>]; and Melissa N. Poulsen, Kristyna R. S. Hulland, Carolyn A. Gulas, Hieu Pham, Sarah L. Dalglish, Rebecca K. Wilkinson, and Peter J. Winch, “Growing an Urban Oasis: A Qualitative Study of the Perceived Benefits of

Community Gardening in Baltimore, Maryland” in *Culture, Agriculture, Food and Environment* 36, no. 2, (2014), pages 69-82 [Retrieved from <https://doi.org/10.1111/cuag.12035>].

²⁵ Michael Q. Patton, *Qualitative Research and Evaluation Methods*, 4th edition (Thousand Oaks, CA: Sage, 2015).

²⁶ Anselm Strauss and Juliet Corbin, *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*, 4th edition (Thousand Oaks, CA: Sage, 2014).

²⁷ Herbert J. Rubin and Irene S. Rubin, *Qualitative Interviewing: The Art of Hearing Data*, 3rd edition (Thousand Oaks, CA: Sage, 2011).

²⁸ Strauss et al., *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*.

²⁹ Soga et al., “Gardening Is Beneficial for Health: A Meta-Analysis”; John Diaz, Susan Webb, Laura Warner, and Paul Monaghan, “Impact Indicators for Community Garden Programs: Using Delphi Methods to Inform Program Development and Evaluation” in *HortTechnology* 27, no. 6, (2017), pages 852-859 [Retrieved from <https://doi.org/10.21273/HORTTECH03848-17>]; Jonathan Kingsley, Emily Foenander, and Aisling Bailey, “‘It’s about Community’: Exploring Social Capital in Community Gardens across Melbourne, Australia” in *Urban Forestry & Urban Greening* 3, no. 49, (2020) [Retrieved from <https://doi.org/10.1016/j.ufug.2020.126640>]; and Kaye Mehta, Silvia Lopresti, and Jessica Thomas, “Addressing Nutrition and Social Connection through Community Gardening: A South Australian Study” in *Health Promotion Journal of Australia* 30, no. S1, (2019), pages 5-8 [Retrieved from <https://doi.org/10.1002/hpja.235>].

³⁰ Jill S. Litt, Mah-J. Soobader, Mark S. Turbin, James W. Hale, Michael Buchenau, and Julie A. Marshall, “The Influence of Social Involvement, Neighborhood Aesthetics, and Community Garden Participation on Fruit and Vegetable Consumption” in *American Journal of Public Health* 101, no. 8, (2011), pages 1466-1473 [Retrieved from <https://doi.org/10.2105/AJPH.2010.300111>].

³¹ Jeffrey Hou, “Urban Community Gardens as Multimodal Social Spaces: In Greening Cities” (Singapore: Springer, 2017), pages 113-130; and Isaac Middle, Peta Dzidic, Amma Buckley, Dawn Bennett, Marian Tye, and Roy Jones, “Integrating Community Gardens into Public Parks: An Innovative Approach for Providing Ecosystem Services in Urban Areas” in *Urban Forestry & Urban Greening* 13, no. 4, (2014), pages 638-645 [Retrieved from <https://doi.org/10.1016/j.ufug.2014.09.001>].

³² Jemma L. Hawkins, Jenny Mercer, Kathryn J. Thirlaway, and Deborah A. Clayton, “‘Doing’ Gardening and ‘Being’ at the Allotment Site: Exploring the Benefits of Allotment Gardening for Stress Reduction and Healthy Aging” in *Ecopsychology* 5, no. 2, (2013), pages 110-125 [Retrieved from <https://doi.org/10.1089/eco.2012.0084>].

³³ Melissa N. Poulsen et al., “Growing an Urban Oasis: A Qualitative Study of the Perceived Benefits of Community Gardening in Baltimore, Maryland”; and James Hale, Corrine Knapp, Lisa Bardwell, Michael Buchenau, Julie Marshall, Fahriye Sancar, and Jill S. Litt, “Connecting Food Environments and Health through the Relational Nature of Aesthetics: Gaining Insight through the Community Gardening Experience” in *Social Science & Medicine* (1982) 72, no. 11, (2011), pages 1853-1863 [Retrieved from <https://doi.org/10.1016/j.socscimed.2011.03.044>].

³⁴ Ranjan Datta, “Community Garden: A Bridging Program between Formal and Informal

Learning,” edited by Rebecca Maree English, in *Cogent Education* 3, no.1, (2016), pages 1-14 [Retrieved from <https://doi.org/10.1080/2331186X.2016.1177154>].

³⁵ Datta, “Community Garden: A Bridging Program between Formal and Informal Learning.”

³⁶ McVey et al., “The Motivations and Experiences of Community Garden Participants in Edinburgh, Scotland.”

³⁷ Ohmer et al., “Community Gardening and Community Development: Individual, Social and Community Benefits of a Community Conservation Program”; Teig et al., “Collective Efficacy in Denver, Colorado: Strengthening Neighborhoods and Health through Community Gardens”; and Joan Twiss, Joy Dickinson, Shirley Duma, Tanya Kleinman, Heather Paulsen, and Liz Rilveria, “Community Gardens: Lessons Learned from California Healthy Cities and Communities” in *American Journal of Public Health* 93, no. 9, (2003), pages 1435-1438.

³⁸ Soga et al., “Gardening Is Beneficial for Health: A Meta-Analysis”; Nada Ptrovic, Troy Simpson, Ben Orlove, and Brian Dowd-Urbe, “Environmental and Social Dimensions of Community Gardens in East Harlem” in *Landscape and Urban Planning* 183, (2019), pages 36-49 [Retrieved from <https://doi.org/10.1016/j.landurbplan.2018.10.009>]; and Mehta et al., “Addressing Nutrition and Social Connection through Community Gardening: A South Australian Study.”

³⁹ Luke Drake et al., “Results of a US and Canada Community Garden Survey: Shared Challenges in Garden Management amid Diverse Geographical and Organizational Contexts”; John Diaz et al., “Impact Indicators for Community Garden Programs: Using Delphi Methods to Inform Program Development and Evaluation”; and Laura Saldivar-tanaka and Marianne E. Krasny, “Culturing Community Development, Neighborhood Open Space, and Civic Agriculture: The Case of Latino Community Gardens in New York City” in *Agriculture and Human Values* 21, no. 4, (2004), pages 399-412 [Retrieved from <https://doi.org/10.1007/s10460-003-1248-9>].

⁴⁰ Mehta et al., “Addressing Nutrition and Social Connection through Community Gardening: A South Australian Study.”

⁴¹ Jeffrey Hou, “Urban Community Gardens as Multimodal Social Spaces: In Greening Cities”; Isaac Middle et al., “Integrating Community Gardens into Public Parks: An Innovative Approach for Providing Ecosystem Services in Urban Areas”; and Andrew Flachs, “Food for Thought: The Social Impact of Community Gardens in the Greater Cleveland Area” in *Electronic Green Journal* 1, no. 30, (2010) [Retrieved from <https://doi.org/10.5070/G313010826>].

⁴² Ohmer et al., “Community Gardening and Community Development: Individual, Social and Community Benefits of a Community Conservation Program”; and Diaz et al., “Impact Indicators for Community Garden Programs: Using Delphi Methods to Inform Program Development and Evaluation.”

⁴³ Ptrovic et al., “Environmental and Social Dimensions of Community Gardens in East Harlem”; Diaz et al., “Impact Indicators for Community Garden Programs: Using Delphi Methods to Inform Program Development and Evaluation”; Datta, “Community Garden: A Bridging Program between Formal and Informal Learning”; and Nicole Mattocks, Megan Meyer, Karen M. Hopkins, and Amy Cohen-Callow, “Clean and Green Organizing in Urban Neighborhoods: Measuring Perceived and Objective Outcomes” in *Journal of Community*

Practice 27, no. 3-4, (2019), pages 351-368 [Retrieved from <https://doi.org/10.1080/10705422.2019.1657538>].

⁴⁴ Beavers et al., “Garden Characteristics and Types of Program Involvement Associated with Sustained Garden Membership in an Urban Gardening Support Program”; and Egli et al., “The Development of a Model of Community Garden Benefits to Well-Being”; and Poulsen et al., “Growing an Urban Oasis: A Qualitative Study of the Perceived Benefits of Community Gardening in Baltimore, Maryland.”

⁴⁵ Beavers et al., “Garden Characteristics and Types of Program Involvement Associated with Sustained Garden Membership in an Urban Gardening Support Program”; and Drake et al., “Results of a US and Canada Community Garden Survey: Shared Challenges in Garden Management amid Diverse Geographical and Organizational Contexts.”

⁴⁶ Poulsen et al., “Growing an Urban Oasis: A Qualitative Study of the Perceived Benefits of Community Gardening in Baltimore, Maryland.”

⁴⁷ Brothers of the Christian Schools, *Declaration on the Lasallian Educational Mission* (page 119): “We believe that education is a fundamental, powerful and productive resource for the care of the Earth and the defense of the habitat where life can flourish and sustain itself.”

⁴⁸ Soga et al., “Gardening Is Beneficial for Health: A Meta-Analysis”; Beavers et al., “Garden Characteristics and Types of Program Involvement Associated with Sustained Garden Membership in an Urban Gardening Support Program”; Kingsley et al., “‘It’s about Community’: Exploring Social Capital in Community Gardens across Melbourne”; Mehta et al., “Addressing Nutrition and Social Connection through Community Gardening: A South Australian Study”; and Andrew Cumbers, Deirdre Shaw, John Crossan, and Robert McMaster, “The Work of Community Gardens: Reclaiming Place for Community in the City” in *Work, Employment and Society* 32, no. 1, (2018), pages 133-149 [Retrieved from <https://doi.org/10.1177/0950017017695042>].