

Growing urban health: Community gardening in South-East Toronto

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SUMMARY

This article describes results from an investigation of the health impacts of community gardening, using Toronto, Ontario as a case study. According to community members and local service organizations, these gardens have a number of positive health benefits. However, few studies have explicitly focused on the health impacts of community gardens, and many of those did not ask community gardeners directly about their experiences in community gardening. This article sets out to fill this gap by describing the results of a community-based research project that collected data on the perceived health impacts of community gardening through participant observation,

focus groups and in-depth interviews. Results suggest that community gardens were perceived by gardeners to provide numerous health benefits, including improved access to food, improved nutrition, increased physical activity and improved mental health. Community gardens were also seen to promote social health and community cohesion. These benefits were set against a backdrop of insecure land tenure and access, bureaucratic resistance, concerns about soil contamination and a lack of awareness and understanding by community members and decision-makers. Results also highlight the need for ongoing resources to support gardens in these many roles.

Key words: community gardens; urban health; community-based research

INTRODUCTION

This article describes results of an investigation of the health impacts of community gardening, using a Toronto, Ontario case study. Community gardens are increasingly part of the urban fabric, in Canada and around the world. These gardens, often built on underutilized land, are seen as having a number of positive health benefits. These include:

- improved access to food and better nutrition (Patel, 1991; Irvine *et al.*, 1999; Dickinson *et al.*, 2003);
- increased physical activity (Armstrong, 2000; Dickinson *et al.*, 2003);
- improved mental health (Armstrong, 2000);
- improved security and safety in local communities (Schmelzkopf, 1995 Ferris; *et al.*, 2001);
- opportunities for community development through education/job skills training (Fusco, 2001; Schmelzkopf, 2002; Holland, 2004);

- increased social capital, through the development of social ties and an increased appreciation of social diversity (Hancock, 2001; Doyle and Krasny, 2003); and
- improved local ecology and sustainability (Hancock, 2001; Schmelzkopf, 2002), which in turn leads to improved long-term health.

Overall, community gardens are thought to provide opportunities for local health improvements and community development (Jamison, 1985; Kurtz, 2001).

However, much of the evidence used to support community gardens is anecdotal. Few studies have explicitly focused on the health impacts of community gardens (one exception is Dickinson *et al.*, 2003), and a surprisingly small number of published studies actually talked with community gardeners about their experiences. Also, few of the existing studies involved gardeners from diverse cultural backgrounds.

In order to address these gaps, this study focuses on the community gardens of South-East Toronto. This area is characterized by high rates of poverty—up to 70% in some census tracts (United Way of Greater Toronto, 2004). It also exhibits pronounced ethnic diversity, specifically up to 79% visible minority, versus 43% for the city as a whole (City of Toronto, 2006). Regent Park, Canada's largest social housing complex, is within this catchment.

METHODS

The research project described in this article used a community-based approach to identify the health impacts of community gardening. Community-based research (CBR) can be defined as 'research with a substantial level of community participation for the purposes of community improvement and social change' (Loka Institute, 2002, cited in Travers, 2003). A central component of this research, therefore, was the inclusion of community members in the identification of research questions and in the interpretation of results. This was operationalized through preliminary discussions with garden coordinators to determine research questions and methods, discussions with gardeners about their research needs as part of the study and numerous venues for the participation of gardeners and the broader community in the

interpretation of research results (e.g. at community events).

To begin the study, active community gardens in the South-East Toronto were identified (Table 1). Three primary techniques were used to collect information on the gardens—participant observation, focus groups and in-depth interviews. Participant observation involves studying the activities of the community—in this case, gardeners—while at the same time being part of their activities. This took the form of helping out (e.g. planting seeds, carrying water and shovelling dirt) in South-East Toronto gardens during the 2004 growing season. Gardens were visited almost daily, and researchers were able to attend garden meetings, community barbeques, harvest events and canning and composting workshops. Detailed field notes were taken throughout for future analysis.

Participant observation was complemented by focus groups [i.e. carefully planned group discussion that explores a defined area of interest in a non-threatening environment—Kreuger (1988)]. Involvement was encouraged through posters at the gardens and by the participant observer and the garden coordinators. Group discussions were structured by a set of questions related to the role of community gardening in people's lives (Table 2). Each focus group lasted between 1 and 2 h. In total, 10 focus groups were held, with three to nine participants in each group.

In-depth interviews were conducted in cases where it was not feasible to hold focus groups; they were also offered as an alternative to encourage participation from those who felt uncomfortable in a group setting. Interviews were guided by the same questions as the focus groups; most took a little less than an hour.

Focus groups (and interviews when possible) were tape-recorded and transcribed verbatim by a professional transcriber. These transcripts formed the heart of the data analysis, supplemented by field notes from the participant observation. Transcripts were analysed through thematic coding; each transcript was read through line-by-line to identify important themes (Strauss and Corbin, 1990). Members of the research team developed lists of theme codes individually; a coherent, consistent set of themes was then generated through group consensus. This master list was used to guide the organization and interpretation of results.

Table 1: Description of gardens included in study

Ashbridge EcoCommunity Garden	Number of plots: 32
This garden is a community-based initiative started and maintained by residents with support from the East End Community Health Centre and some funding local businesses. One plot is used to grow food for local food bank. Regular meetings are held. There is a waiting list.	
Christian Resource Centre, Garden 1	Number of plots: 28
Christian Resource Centre, Garden 2	Number of plots: 24
Christian Resource Centre, Garden 3	Number of plots: 24
These three gardens are located around the Toronto Christian Resource Centre. They are gardened by families and individuals from many different cultural backgrounds living in Regent Park. Monthly meetings (during growing season) are coordinated by CRC. There is a waiting list.	
Growing Together	Number of plots: 33
This garden is located between highrise buildings in St Jamestown and the highly coveted plots are gardened by residents. One plot is gardened communally by Growing Together which is staffed by one part-time coordinator. There is also a Balcony Gardening Project involving workshops on growing food in containers. Attendance for these workshops is high; many participants are recent immigrants from diverse cultural backgrounds. The garden has a long waiting list. Funding is insecure.	
Miziwe Biik	Number of plots: N/A
This garden was recently initiated by Evergreen Foundation. Raised beds and barrels containing native plants, edible greens and some vegetables surround the building. A garden coordinator from within the native community is hired for one growing season. Participants attend garden-related events and community bbqs.	
Moss Park	Number of plots: 26
This garden was started by numerous organizations including the Fred Victor Centre, Evergreen Foundation and John Innes Community Centre. Plots are gardened by individuals, school groups, seniors and organizations including the Fred Victor Centre.	
Mustard Seed	Number of plots: 5
The garden is attached to a low-income women's housing development, and gardened by residents from the building. Surplus food is used in the community kitchen.	
Regent Park, Garden 1	Number of plots: 50
Regent Park, Garden 2	Number of plots: 40
Regent Park, Garden 3	Number of plots: 30
Regent Park, Garden 4	Number of plots: 22
These four gardens are coordinated by the Regent Park Community Health Centre. The plots are gardened by families and individuals from many different cultural groups living in Regent Park. There is a long and growing waiting list. Tenure of the gardens is insecure, particularly in the face of the Regent Park redevelopment.	
Leslie St Allotment Gardens	Number of plots: 200+
Diverse community members from throughout the city garden here. Some are home owners. Many cultural backgrounds. Waiting list.	
220 Oak Street	Number of plots: 32 (20 individual, 12 communal)
Re-established in 2004 by tenant organization, some support from Toronto Housing Corporation, have applied for further funding, strong community involvement, regular events. There is one plot set aside as a communal plot.	
Field to Table/Foodshare	Number of plots: N/A
Description: Youth at risk garden greenhouse programme, composting, planting.	

Preliminary results were communicated to research participants, other gardeners and members of the broader community at a number of events to help assess the credibility of researchers' interpretations of participant experiences, a process known as member-checking (Baxter and Eyles, 1997).

Overall, 55 people participated in focus groups, and 13 in interviews. While relatively robust for qualitative research, these numbers are not large enough to be generalizable. Instead, the research is intended as a window into the experiences of the particular gardeners

that we spoke with and observed. At the same time, it is hoped that many of the themes and issues we identify will resonate with other gardeners, and our research dissemination and member-checking activities suggest that this is the case.

RESULTS

This section begins with an overall summary of what we observed of the gardens. The results of the focus groups and interviews are then

Table 2: Question guide for focus groups and interviews

Questions for gardeners

- What do you grow in your garden, and why?
 What are the good things about community gardening?
 What worries you about community gardening?
 How did you start gardening, and why do you keep doing it?
 Who is touched by your gardening, and how?
 What questions about gardening, food and health would you like answered?
 What is the best way to answer those questions?
 Can you help answer those questions, and how?
 How can gardeners, gardening organizations and researchers work together better?
 How can people at risk (like people without a safe place to live, or troubled youth) take part?

presented, focusing on the perceived health benefits of community gardening, and problems and challenges faced. Results are illustrated using direct quotes from the transcripts. The language used reflects the diversity of research participants, including the fact that English was a second language to many. We have retained the original wording of these quotes, since they represent an important opportunity for participants to speak ‘for themselves’ in their own words, and because they are powerful and moving expressions of ideas.

The community gardens of south-East Toronto

The community gardens identified in this research were extremely diverse. They varied greatly in size (from a large field to a narrow space between a building and a sidewalk) and in organization (from allotment gardens with individual plots, to communally worked gardens, to gardens that offer employment). In addition, participants exhibited tremendous diversity in terms of cultural background.

Most gardens were divided into individual plots, about the size of a dining room table. Many different kinds of vegetables were generally grown within one plot. Some plots were utilitarian, with plants rigorously trained and controlled for maximum productivity; others were less controlled. Many contained flowers as well as vegetables. Overall, the gardens conveyed a sense of lushness and abundance (Figure 1).

Some gardens were fenced, but many were not. In many cases, the gardens were found adjacent to a building. Community gardens that were situated near the homes of the gardeners involved seemed to be used regularly and consistently, whereas gardens in areas not

immediately adjacent to the housing of participants were not frequented as regularly.

In many cases, the gardens were empty for large parts of the day. Even while the gardens were empty, there seemed to be a high level of interest from passers-by. A frequent question from non-gardeners was, ‘where can I find a plot?’ This interest within the community was not matched by availability—most gardens had waiting lists for plots.

The gardens were most active in the evenings. Many gardeners were women, but men and children were also often in attendance, working their own plots or (in the case of the children in particular) serving as helpers. Regular tasks involved planting, weeding, watering and of course harvesting; many growers gathered food for dinner from the garden every day. The gardens served as a place for people to gather and socialize. Although there were language barriers among participants, communication was effectively maintained through hand gestures and exchanges of food.

This general description is intended to give the reader some insight into the community gardens of South-east Toronto. The sections following provide insight into the experiences of the gardeners themselves, as expressed in the focus groups and interviews.

Health benefits of community gardening

The first set of health benefits discussed here relate to the physical health of participants. Important themes include better access to food (an issue of particular importance for gardeners with low incomes), improved nutrition, increased physical activity and improved mental health.



Fig. 1: A selection of community gardens in South-East Toronto.

One of the central benefits of community gardening mentioned by the gardeners was, not surprisingly, better access to fresh wholesome food. Most participants spoke of improved food access and cost-saving in some way. In some cases, substituting garden-grown produce for store-bought foods was seen to make a significant difference in household food costs:

Thanks God ... until October I've not bought from No Frills or another shop.

For most, the gardens played a strictly supplementary role, filling gaps in their diet. In particular, being able to grow and eat culturally appropriate foods was important to participants:

We were part of a different country...our taste is related to our produces... (I grow) our country's spinach in my garden.

Although some culturally appropriate foods were available in local shops, participants commented that these foods were often exorbitantly expensive and they were not fresh. The freshness of the produce from the garden was seen as a benefit: "Things that we grow, it's fresh!" Children were seen as particularly benefiting from access to fresh produce.

Another commonly mentioned benefit of the community gardens was their contribution to healthy living, in the form of better nutrition and increased exercise. Participants spoke of eating more vegetables because of their community garden involvement:

I've switched to having more vegetables.

This is important given that higher consumption of vegetables and fruits is known to promote health and prevent disease, but may be harder for people with limited incomes to attain (Power, 2005). In addition, the majority of participants felt that growing food organically was important. In some cases there was an agreement in place to grow without pesticides. Gardeners were thus reducing their exposure to pesticide residues, which might also improve their long-term health.

Gardeners said that their gardening helped keep them physically (and mentally) active:

It's a form of exercise, relaxation...getting away...from the TV, uh...a way to produce something with your hands... it's nice to see something grow that you started.

The garden and me, we're like old friends. I just like to plant, to go and make myself useful and busy. In here [touching chest], that's what I need.

For some, especially the elderly, the exercise and activity—both physical and mental—the garden offered was essential. The above quotes also illustrate how gardening is seen as an activity that impacts on the gardeners' sense of well-being. This sense that gardening contributed to mental health was voiced repeatedly in the interviews and focus groups:

...sometimes when you are stressed out... when you go to the garden, you feel different.

It helps you hold onto life.

One component of this feeling of improved mental health seemed to be that participants found the opportunity to interact with nature relaxing and calming. Participants appreciated "[the] opportunity to get out into nature even though I live in the city". The community gardens were seen to offer spaces of retreat within densely populated neighbourhoods.

The second set of benefits discussed here relates to the positive impact that community gardening is seen to have on 'community health'. That is, community gardens are seen to benefit the community as a whole, by improving relationships among people, increasing community pride and in some cases by serving as an impetus for broader community improvement and mobilization.

At an individual level, gardeners expressed pride in their garden involvement. Sharing produce they had grown was very satisfying:

I give away tomato... I enjoy it because when I reap, my friends come and share ...they give me warm reception.

This opportunity to share something they had produced was of great importance to gardeners, particularly among those with low incomes.

In general, gardening was an empowering experience and a way of having something in life 'work out'. This feeling was enhanced by garden-based programming, which occurred in many of the gardens. As one respondent noted, these programs could help to build self-esteem through development of skills:

...the program here, like, helps us all to develop skills that we never thought we had.

This individual sense of pride emerging from the gardening and associated programmes was often extended to the wider community as well, and the community gardens were also thought to increase attachment to the community:

...the gardening is such a great thing, it encourages love for the area, love for the city.

...everyone in the community kind of benefits too...it's a nice green space now, where it was just a rubble pile and leaves for a long time, and so it makes the whole community look nicer.

As expressed in the second quote, the community gardens not only enhance community connection, but also the physical features of the community to its broader benefit.

The gardens were also seen by gardeners as a place for positive social interaction. As one gardener noted, the garden is a place where "people come together... it breaks isolation". This is a particularly important benefit of community gardening in communities where social exclusion and marginalization are pervasive problems. Again, the importance of 'sharing' comes across as a prevalent aspect of community garden culture:

We share ideas, we share ...tools, vegetables we share, the foods, we share even the knowledge, cultures, through gardening.

Sharing not only vegetables and tools, but also ideas, across cultures and other social differences was seen as a particularly potent form of social engagement within the gardens:

...it was great...we got together with other neighbours, neighbour gardeners and talk about fruits and vegetables and how to cook.

...we can know each other, and we can share everything like a culture, like a food...and the only thing that I know to meet these people is to do this gardening.

... we all learn from each other, as gardeners, everyone there is, we're out there with somebody, and you can share stories or, or talk to each other, that's something that we can share.

For many, the gardens served as meeting places. In some cases, this could lead to broader discussions about other, non-garden-related issues of importance to the community:

In the process of organizing this garden in the community, it helps people, it helps us to organize other programmes that will be able to help us encourage each other...

This suggests that community gardens can be important places for building broader community involvement.

Overall, the gardens were seen as very beneficial to the gardeners. These benefits were often expressed as a strong emotional attachment to the gardens themselves. The fact that there are long waiting lists for many of the gardens, and that many passers-by enquire about the gardens and how to get involved, suggests that there is a larger population—beyond current gardeners—that also sees their value.

Concerns and challenges

The gardeners also identified a number of issues that they perceived as problems or challenges to be faced. The primary concern raised was that of insecure tenure. All of the gardens were located on sites that were not directly owned by the gardeners, and many gardeners had concerns about whether or not their access to the land would be continued over time. In the Regent Park social housing complex, the future of the gardens has become an immediate concern due to the recently initiated redevelopment of the area. For example, residents commented:

They say yes, we're going to have gardens but they're not in the plans.

We can't think about future because they're going to break down the area...

This is a source of consternation to gardeners, particularly given the strong sense of attachment that they feel to the gardens. The following quote illustrates the impact of insecure tenure in the face of redevelopment expressed by many residents:

...I'm worried – when's the condo going to come? Because they keep on talking about development, and then my brain starts to race. How can I get another garden? Where can I get it?

This uncertainty could impact negatively on gardeners' mental health through feelings of increased stress and lack of control.

Overall, gardeners felt that the gardens and their needs were not appreciated or considered by decision-makers. Gardeners felt that there was a lack of awareness about the gardens, and that this was accompanied by a lack of political will to assist the gardens:

They have no, they obviously don't see, City Council doesn't see us as something as important, you know, health wise, community wise. . . like it's certainly a lot cheaper than running a swimming pool, on what an acre of land, probably half an acre.

The gardeners saw this as reflecting a lack of awareness or appreciation of the gardens more generally. In their minds, this lack of appreciation was also expressed through litter and vandalism.

In addition, some gardeners expressed concerns about personal safety:

Uh ..and also I'd heard the rumour of, as a woman, that there's somebody stalking people or attacking people in community gardens, so I, I, I don't feel particularly unsafe, I usually go out there before dark. That kind of concerns me about that, it's happening in other gardens around the city.

At the same time, other participants also spoke of feeling particularly safe within their community gardens, as the following quotes illustrate:

You come here, you've got a fence, nobody gets in without a key, you're safe in here.

The kids in here are safe.

This feeling of safety was to a certain extent dependent on the garden's physical infrastructure (e.g. whether it is fenced) as well as on participants' overall sense of the dangerousness of the community outside the garden's boundaries. It should be noted that we found no documented attacks on gardeners in community gardens in Toronto, and there were relatively few mentions of vandalism in the focus groups and interviews, even in the unfenced gardens.

Gardeners were also concerned about the impacts of the physical environment on the quality of their produce, and in turn on their health. Many participants saw growing in contaminated soil as the most significant risk associated with community gardening:

What I would like to do is to get the soil tested. I'm kind of not sure about the soil quality. I know some topsoil was added but I don't know how healthy it is.

Air pollution was also mentioned as a possible source of contamination:

In any city the air pollution is bad and you can expect something to be getting into anything you grow, so that is one of the problems with vegetables growing in the city.

In this way, community gardeners see an intimate connection between the quality of local (urban) environments and risks to their health that non-growers may fail to appreciate. Interestingly, preliminary testing conducted in a related project suggested that city-grown vegetables from one downtown garden were no more contaminated than their supermarket counterparts (Diamond, personal communication)—however, urban soils can be contaminated from previous land uses, and so tests are useful to ensure that no contaminants are present at the garden site. In many of the gardens studied, soil tests had been conducted early in the development of the gardens, and steps were taken to remediate the sites if necessary.

The gardeners also felt that support for the gardens, in terms of direct funding and in-kind support for infrastructure, were fundamental to the operations of the gardens but often lacking. The following quotes capture some of these concerns:

What is important here is the funding. . . Without money ideas don't work. We need funding.

I think many people are in want of seeds.

...gardening implements. . .we don't have a lot, we have one, we use it and you find it in the process of using one implement, it brings confusion, it brings problems. . . we need lots of bins around us to be able to compost. . . So that is just uh we need more education, we money, we need assistance to help us run the garden.

...most of us, we don't have a lot of money. So we need as much assistance as we can. It seems like a lot of work, to get any kind of assistance? . . . We need more money to put into these community gardens, because this is a way of promoting a healthy society.

As the above quotes suggest, additional resources to support garden activities would be much appreciated by gardeners. Many of the gardens' most pressing needs are for improved infrastructure. In some cases, the infrastructure lacking is fairly basic (such as access to water

and garden tools). In others, gardeners' wish lists included greenhouses and community kitchens. In all cases, the gardens' ability to function and to promote community development was considered to be hampered by limited resources. This was exacerbated for low-income gardeners, who found it very difficult to commit any of their own financial resources to the garden or even to their own gardening activities.

DISCUSSION AND CONCLUSION

This study highlights the important role that community gardens play in the lives of gardeners, and how they enhance the health and well-being of gardeners and the broader community. An overarching finding of the focus groups, interviews and participant observation was that 'community gardens matter'. Growing one's own fresh food was not only seen as cost-effective, but was also a way to access culturally appropriate foods. Community gardens were seen to contribute to improved nutrition among gardeners and their families. In addition, the opportunity for physical activity that gardening presented was seen as beneficial to health, especially for the elderly. For many, being part of a community garden was stress-relieving, and was thought to contribute to improved mental health. These findings are consistent with much of the existing literature, which similarly suggests that community gardening can lead to positive health outcomes through improved nutrition, increased physical activity and enhanced mental health (Patel, 1991; Irvine *et al.*, 1999; Armstrong, 2000; Dickinson *et al.*, 2003).

Community networks and social support were developed through the gardens. The gardens were seen by many as a place where communication with people from other cultures could begin, using food and shared experience as a starting point for understanding. This was seen to help to bring people out of isolation, and served as a starting point for broader discussions of community issues. The development of local social ties and an increased appreciation of social diversity (Hancock, 2001; Doyle and Krasny, 2003) have been mentioned in previous studies; this research highlights the importance of the gardens as a venue for community engagement.

Challenges faced by community gardens were also raised. Insecure tenure is a key concern for gardeners, and this issue is becoming more pressing in the South-East Toronto area with the redevelopment of the Regent Park housing estate. The lack of support for community gardens from decision-makers, and the lack of resources (financial and otherwise) available to the community gardeners were also problematic. Given the long waiting lists for garden plots, assisting these projects to start and grow could have utility beyond current users.

This article focuses attention on the potential of community gardens as a mechanism for promoting urban health. Results are in line with other investigations, which similarly suggest that community gardens have many positive health benefits. What this article adds is a focus on the live experiences of gardeners as a mechanism for revealing these benefits. Further research that provides quantitative assessments of these health benefits or that evaluates the effects of newly created community gardens as a form of health intervention would enhance our understanding of the potential for community gardens to enhance urban public health. It should be noted that, despite their benefits to nutrition, community gardens are not an adequate substitute for social programmes that provide a sufficient income to purchase food. However, the potential for these gardens to serve as vehicles for broader community development deserves further investigation.

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