



Evaluation of the Grow Your Groceries Home Gardening Program in Chicago, Illinois

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Abstract

COVID-19 exacerbated existing disparities in food security in Chicago. Home gardening can improve food security but there are often barriers to participation and the benefits are understudied. Chicago Grows Food (CGF) formed in 2020 to address food insecurity during COVID-19, and created the Grow Your Groceries (GYG) program to provide home gardening kits to families at risk of food insecurity in Chicago. A participatory program evaluation was conducted to better understand the experiences of and benefits to individuals participating in GYG. Program participants shared feedback via focus groups ($n=6$) and surveys ($n=72$). Qualitative data were analyzed using an iterative coding process. Quantitative data were analyzed using descriptive statistics. Most participants reported confidence in using a grow kit to grow food, increased healthy food consumption, easier access to healthy food, and high likelihood of growing food again. Additionally, participants described increased connections within their communities, increased interaction with their family, and personal growth as benefits of the program. These results demonstrate the benefits of a novel home gardening program that uses fabric grow bags to address food insecurity. A larger scale program evaluation is necessary to better understand the impacts of participating in this home gardening program.

Keywords Participatory evaluation · Mixed methods · Urban agriculture · Food security · Gardening

Introduction

Large disparities in rates of food insecurity exist in Chicago and are concentrated on the South and West sides of the city in predominantly Black and Latinx communities [1, 2]. In some of these community areas, 52–82% of the population falls below the 185% federal poverty level, an indicator for food insecurity. Food insecurity is defined by the US Department of Agriculture (USDA) as “a household-level economic and social condition of limited or uncertain access to adequate food” [3]. The United Nations Food and Agriculture Organization (FAO) expands on this definition by defining food security as “all people, at all times, hav[ing] physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life” [4]. The COVID-19 pandemic exacerbated existing rates of food insecurity by disrupting supply chains and household incomes [5]. The cost of groceries increased during the peak of the pandemic and continues today, making food less affordable for individuals [6]. The true impact of the pandemic on food insecurity

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is not yet known, but a study of food insecurity by researchers at Northwestern University found that 16% of households in the Chicago Metro area experienced food insecurity at the beginning of 2022 [7]. The same study found that 29% of Black households, 24% of Latine households and 11% of white households experienced food insecurity during the same period of time. Finally, households with children were more likely to experience food insecurity according to the study (22% overall; 32% of Black households; 28% of Latine households; and 16% of white households). Increased rates of food insecurity due to COVID-19 mirror the inequities of food insecurity before the pandemic [7].

Food insecurity is associated with adverse health effects throughout the life course [8]. In children, food insecurity is associated with some birth defects [9], anemia [10], poor academic performance [11], behavioral and mental health problems like aggression, anxiety, depression [11] and poorer overall health [12]. Among adults, food insecurity is associated with poor mental health [13] including depression and stress [14], chronic diseases including hypertension, coronary heart disease (CHD), hepatitis, stroke, cancer, asthma, diabetes, arthritis, chronic obstructive pulmonary disease (COPD), and kidney disease [15], and generally poorer health [15]. Finally, while less studied in the US, food insecurity among older adults is associated with a negative feedback loop whereby food insecurity can cause increased morbidity and/or poor health can cause food insecurity [16].

Home gardening can improve food security by providing individuals with access to healthy, culturally relevant foods, and by increasing the affordability of healthy foods. For example, in a study of home gardeners that participated in a garden support group in Detroit, Michigan, respondents reported that participating in the program helped them save money on food and preserve food to last beyond the growing season [17]. In another intervention researchers surveyed participants to analyze the impacts of a home gardening program in San Jose, California, revealing considerable food cost savings among participants [18]. Additionally, the cost savings and availability of free, fresh produce allowed participants to consume more healthy food [18]. A study of home gardeners in Toronto, Canada demonstrated that home gardening improved food security across all levels of income [19]. Finally, a study of home, community, and community food security program gardeners in Santa Clara County, California found that all types of gardening allowed participants to harvest enough fruits and vegetables to meet the federal nutrition intake guidelines for fruits and vegetables and increased some gardeners' access to healthy food that they otherwise could not afford [20].

Despite the benefits of home gardening, there are numerous barriers. Space is one common barrier, especially for individuals who live in urban areas or for renters who do not have permission to use the outdoor space where they

reside [19, 21, 22]. Lack of individual or community knowledge can also limit an individual's ability to start growing their own food or their success in producing food [19, 21]. Additionally, time may be a barrier to growing food since establishing and maintaining a garden can require a significant amount of time [21, 23–25]. Relatedly, socioeconomic limitations can affect the time and resources an individual can allocate to growing their own food [22].

In May 2020, Chicago Grows Food (CGF), a collaborative of nearly a dozen Chicago-based individuals, school-based organizations, university partners, and non-profit organizations, launched the Grow Your Groceries (GYG) program to address increasing rates of food insecurity in Chicago due to the COVID-19 pandemic. The GYG program provides home gardening kits, which include a 1- or 5-gallon fabric grow bag, soil, seeds or a seedling, and an education book in English or Spanish to address the physical and educational barriers that individuals often face to growing food. GYG was developed to support families most affected by food insecurity due to COVID-19. Schools were and still are the primary vehicle for distributing the GYG grow kits, and K-12 educators in Chicago Public Schools (CPS) are key partners in the program. Schools are ideal environments for assessing home gardening barriers for families and distributing home garden program materials because relationships between educators, families, and CGF member organizations already exist.

To understand the experiences of program participants and how they benefited from the GYG program, CGF conducted a participatory evaluation (PE) of the 2020 program cycle. Specifically, CGF was interested in understanding how the GYG program impacts participants' confidence in growing food, access to healthy food, consumption of healthy food, and desire to continue growing food. Additionally, CGF was interested in learning about participants' overall program experience and the types of support that participants needed to be successful in the program.

Methods

Setting

The GYG program was distributed throughout the City of Chicago, primarily to individuals residing in low food access communities (Fig. 1). The program was implemented primarily on the South, Southwest, and West Sides of Chicago in predominantly Black and Latinx community areas (Fig. 1). The percent of individuals living below 185% of the Federal Poverty Level is often used as an indicator for food insecurity at the community area level in Chicago because food insecurity data are not often collected [2]. Community areas on the South, Southwest, and West sides of Chicago

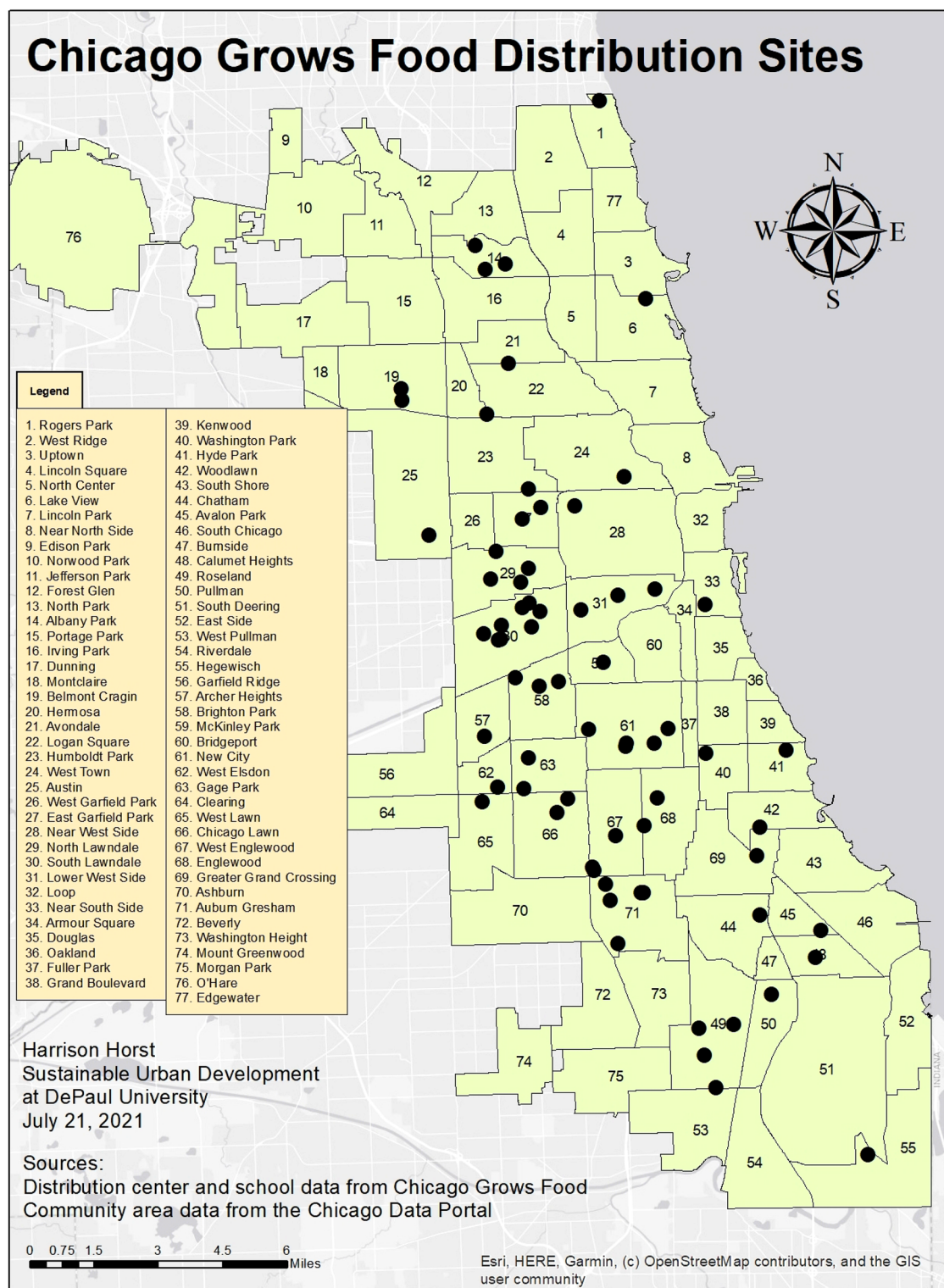


Fig. 1 Map of 2020 Chicago Grows Food program locations

typically experience disproportionately high rates of estimated food insecurity compared to community areas on the North Side of Chicago [2]. Grow kits were distributed to

community areas where between <15 and 82% of the population were estimated to be food insecure [2]. A majority of kits were distributed to community areas with an estimated

rate of food insecurity between 41 and 82%. The GYG program was planned remotely by CGF member organization using funding obtained through private donations and grants. CGF members leveraged their connections with community-based organizations and CPS to distribute the kits to Chicago families. The kits were utilized at the homes of families and in CPS classrooms.

Study Design and Recruitment

Study Design

As a collaborative effort made up of an array of individuals with diverse skills and talents, CGF drew upon the evaluation experience of members from community-based organizations and universities. During the spring of 2021, a program evaluation team was organized based on interested members within CGF, some of whom received funding through a grant from the University of Illinois at Chicago. The group decided on a participatory approach to evaluation that incorporated voices of all members of the evaluation team as well as program participants in the design of evaluation protocols. PE is an umbrella term for a variety of approaches which incorporate those impacted by programs and interventions in decision making on evaluation design and implementation [26, 27]. The approach encourages ownership of the evaluation process by those working on and impacted by programmatic interventions. PE can have a transformative effect on both program administrators and participants [28], especially as power over data collection and ownership is harnessed by populations who traditionally do not have power in these processes. At minimum, PE can have practical implications for improving accuracy of evaluation tools employed to elevate and articulate the voices, concerns, and ideas of those populations.

To engage in PE, first an evaluation logic model was created by the CGF evaluation team. The logic model included program objectives, outcomes, and details of how these items could be measured. The CGF evaluation team recruited four GYG program participants through convenience sampling to provide feedback on the logic model during a focus group. Participants were compensated with a \$50 electronic gift card. Feedback from the focus group was incorporated to finalize the logic model. Once finalized, the logic model informed the creation of a 17-question participant feedback focus group guide to obtain feedback about the program from program participants.

The evaluation team recruited participants for the program feedback focus groups using convenience sampling. Teacher partners who distributed grow kits to families requested the participation of family members in a focus group to provide feedback about the program. Teachers who used grow kits in their classrooms were also eligible

to participate. Recruitment materials were shared in both English and Spanish. A total of two focus groups were conducted via Zoom by two members of the evaluation team trained to conduct focus groups. Participants were compensated with a \$50 electronic gift card sent through the Tango Card online platform.

Following the focus groups, the evaluation team developed a 21-question survey in English and Spanish informed by the logic model and focus group responses. The survey was created and distributed in Qualtrics, and the evaluation team recruited program participants in English and Spanish to complete the survey from an email listserv of 459 program participants. Individuals were offered a \$25 gift card for completing the entire survey. IRB exemption was granted for this study.

Data Analysis

Focus groups recordings were transcribed using an online transcription software and checked for accuracy by a member of the evaluation team. Following Saldaña's [29] iterative coding process, two coders created initial codes by reading through the focus group transcripts and identifying initial themes. The initial codes were combined to create an initial codebook. Next, the two coders recoded the transcripts using the codebook. Codes were compared and modifications were made to the codebook as needed until core themes were identified. Transcripts were re-coded using the final version of the codebook. At the end of the coding process, there were a total of 56 codes.

Survey data were divided into qualitative and quantitative data. Data from the three qualitative questions were cleaned and coded using the same iterative coding process as the focus group data. Quantitative data were cleaned in Microsoft Excel and descriptive statistics were calculated in SPSS.

Results

A total of six GYG program participants participated in the program feedback focus groups and a total of 72 individuals completed the entire program feedback survey. Of survey respondents, the median age was 40 years with a minimum age of 18 years and a maximum age of 66 years; 86.1% were female; 59.7% were Latinx, 25.0% were Black and 11.1% were white; 65.3% selected English as their preferred language; and 43.1% resided on the South Side of Chicago and 37.5% resided on the Southwest Side of Chicago (Table 1).

Program Experience

Table 2 summarizes data from focus groups and surveys including how often individuals cared for the plants in their

Table 1 Demographics of survey respondents (N = 72)

Characteristic	N (%)
Age (years) ^{a,b}	41.24 (10.51)
Gender	
Female	62 (86.1)
Male	7 (9.7)
Gender queer or gender non-conforming	1 (1.4)
Race or Ethnicity ^c	
Hispanic or Latinx	43 (59.7)
African American or Black	18 (25%)
White	8 (11.1)
Asian	4 (5.6)
Native American	1 (1.4)
Region of Chicago	
South Side	31 (43.1)
Southwest Side	27 (37.5)
North Side	7 (9.7)
Suburbs	6 (8.3)
West Side	1 (1.4)
Preferred language	
English	47 (65.3)
Spanish	25 (34.7)

Data are displayed as N (%) unless otherwise noted

Zip code data were combined into regions to generate the “region of Chicago” variable for data analysis and reporting

^aMean (SD)

^bReduced sample size due to missing data; data displayed for respondents not missing demographic data

^cThis was a multiple response question. One respondent selected both Latinx and Native American; one respondent selected African American or Black and white; one respondent selected Latinx and white; and one respondent selected Asian and white

grow bags, who program participants grew with, how participating in the program affected the amount of time they spent outdoors, and barriers to participating in the program, which were used to understand participants’ experiences with the program. The majority of survey respondents took care of the plants in their grow bag two or more times per week (49.3%), while most other participants tended to their plants daily (46.4%). Very few participants only took care of their plants one to four times per month (1.4%) or zero times per month (2.9%). Survey respondents were also asked if they used the grow kit with members of their household. The greatest percent of respondents used the grow kit with only children in their household (38.0%) followed by use with both other adults and children in their household (33.8%). Approximately one-fourth (22.5%) of respondents did not use the grow kit with members of their household. Finally, the fewest percent of respondents (5.6%) used the grow kit with only other adults in their household. The focus groups and open ended survey responses provided additional details

Table 2 Program experiences (N = 72)

Variable	N (%)
Previous growing experience ^a	
I have never grown my own food	19 (27.5)
I thought about growing my own food but didn’t	20 (29.0)
I had previous grown my own food	30 (43.5)
Frequency of caring for plants in grow kit ^a	
0 Times per month	2 (2.9)
1–4 Times per month	1 (1.4)
2 or more times per week	34 (49.3)
Daily	32 (46.4)
Barriers experienced while using the grow kit ^b	
Insect or animal pests	12 (16.7)
Access to outdoor space	8 (11.1)
Access to indoor space if growing inside	6 (8.3)
Access to water	1 (1.4)
Safety	0
Weeds	5 (6.9)
Weather	5 (6.9)
Lack of knowledge of how to garden	15 (20.8)
Lack of money to garden	3 (4.2)
Lack of time to garden	2 (2.8)
Physical impairment or disability	0
Lack of friends or family to garden with	1 (2.8)
I did not experience any barriers	32 (44.4)
Used the grow kit with other members of household ^a	
Yes, only with other adults	4 (5.6)
Yes, only with children	27 (38.0)
Yes, with both adults and children	24 (33.8)
No	16 (22.5)
Effect of using the grow kit on time spent outdoors	
Spent less time outdoors	0
Spent the same amount of time outdoors	16 (22.2)
Spent a little more time outdoors	23 (31.9)
Spent more time outdoors	21 (29.2)
Used grow kit inside	12 (16.7)
Grow kit helped overcome challenges associated with the COVID-19 pandemic ^{a,b}	
Neighborhood violence	7 (9.7)
Loss of friends or family	9 (12.5)
Loss of income	20 (27.8)
Food insecurity	16 (22.2)
Feelings of stress, anxiety, and/or loneliness	5 (6.9)

Data are displayed as N (%) unless otherwise noted

^aReduced sample size due to missing data; data displayed for respondents not missing data

^bThis was a multiple response question

about how individuals interacted with members of their household to use the grow kit. Family involvement was a major theme from the focus groups, which related to not

only families directly engaging with the grow kit but also connecting through the food that was grown. For example, one survey respondent described how she engaged her children in using the kit, sharing “I showed my kids the process of how plants grow to cultivate vegetables that we could eat.” Another survey respondent described how the kit provided a collective sense of responsibility among their family by sharing, “I really appreciated the kit, it was very useful and my family and I really enjoyed it. It helped us bond by giving us an activity that we were all responsible for.”

Most survey respondents reported spending more time outdoors as a result of participating in the program. The greatest percentage of respondents spent a little more time outdoors (31.9%) followed by those who spent more time outdoors (29.2%). Approximately one-fourth (22.2%) of respondents spent the same amount of time outdoors. Some respondents (16.7%) used their grow kit indoors, so the amount of time they spent outdoors was not affected by the program. From the focus groups, we learned more about the connection between using the grow kits and time spent outdoors. One focus group respondent shared that the grow kits provided an activity away from screens, “I think it increased the awareness of being outside and appreciating something other than playing on a game inside.”

Survey respondents were asked to select the types of barriers they experienced while participating in the program. Overall, the greatest percentage (45.6%) experienced one barrier while 29.8% of respondents experienced zero barriers. The most common barriers were lack of knowledge about gardening (26.3%); insect or animal pests (21.1%); and access to outdoor space (14.0%). The focus group and open ended survey questions revealed additional barriers including not always providing culturally relevant materials including Spanish educational booklets and culturally appropriate seeds and seedlings; making sure the kit components are standardized; and providing printed educational materials in bulk to teachers who plan to use the kits in their classrooms. One teacher participant who participated in the focus group elaborated on the issue of not having enough Spanish education booklets for their program participants by sharing,

This project is such a, like a familial like project. So even if the kids are [English Language Learners (ELL)] and can read and speak English the parents can't necessarily, and they are some of the leaders. So we did get supplies, but there weren't enough in Spanish.

Program Outcomes

The survey and focus groups included questions to help CGF understand the impact of the program on participants' lives (Results summarized in Table 3). Survey respondents

Table 3 Program outcomes (N = 72)

Variable	N (%)
Confidence in using a grow bag to grow food ^a	
Not at all confident	1 (1.4)
A little confident	23 (32.9)
Very confident	46 (65.7)
Confidence in ability to prepare produce from grow kit ^a	
Not at all confident	0
A little confident	15 (21.2)
Very confident	56 (78.9)
Helped participant eat healthier ^a	
No, not at all	1 (1.5)
Yes, a little	30 (44.8)
Yes, a lot	36 (53.7)
Made it easier to access fresh produce ^a	
No, not at all	5 (7.2)
Yes, a little	35 (50.7)
Yes, a lot	29 (42.0)
Likelihood of growing food again	
Not at all likely	0
Somewhat likely	3 (4.2)
Neutral	3 (4.2)
Likely	23 (31.9)
Very likely	43 (59.7)

Data are displayed as N (%) unless otherwise noted

^aReduced sample size due to missing data; data displayed for respondents not missing data

reported confidence in growing their own food and preparing the food that they grew by using their grow kit. After participating in the program, a majority of survey respondents were very confident (65.7%) or a little confident (32.9%) in using a grow bag to grow their own food. All survey respondents reported some level of confidence preparing fruits, vegetables, and herbs that they grew in their grow kit with 78.9% reporting very confident and 21.2% reporting a little confident. Participants also described their personal growth in learning how to grow their own food during the focus groups and through the open ended survey responses. Participants felt more confident in growing their own foods and obtained a new skill from the comfort of their home. One survey respondent described their food growing journey by sharing,

Because of the one and only Chicago Grows Food grow bag I received, this spring we started our own seedlings and actually transplanted 7 different crops! I'm excited to say we've harvested our 1st zucchini and are looking forward to the rest of the season.

Participants also described how the grow kits helped them access and eat healthier food. When asked if growing their own food using the grow kit helped them eat healthier food, 53.7% of survey respondents selected “yes, a lot” and 44.8% selected “yes, a little”. During the focus groups, participants described how the kits helped them eat healthier food both at home and at schools. One focus group participant who is also a teacher described how the produce that her students grew in the classroom was incorporated into salads in the lunchroom that the students were very excited to eat. The participant shared, “The kids get really excited about eating the salad that they harvest themselves. They put the seeds there and then they harvest it. And then [the lunch chef] has it ready for the kids to eat at lunch”. Survey respondents were also asked if using the grow kit made it easier to access fresh fruits, vegetables, and herbs. Of survey respondents, 50.7% selected “yes, a little” and 42% selected “yes, a lot”.

Participants also expressed excitement about learning to grow their own food and being able to enjoy their successful harvests. One focus group participant shared,

To be able to get that grow kit and see my fresh vegetables coming out, I think I got the green peppers; So, I was very excited about that. So just getting the grow kit for the first time made me want to continue it because I was very excited to see it grow and be able to use some of that in my cooking.

Another focus group participant described the excitement of getting to watch the plants grow, stating “The smell, the fluidly, just the way [the plants] look and the way they’re growing every day and noticing new changes, you know, day by day. And I mean, that all was very exciting and very relaxing”. A majority of survey respondents indicated they were likely to grow their own food again, with 59.7% selecting “very likely” and 31.9% selecting “likely”. Notably, all of the survey respondents indicated they were likely to grow their own food again. One challenge that emerged from the focus groups related to growing food again was the disposable appearance of the grow bags. Some focus group participants shared that families might not know that the grow bags can be used for many future seasons.

Participants shared information about how participating in the GYG program helped them overcome challenges associated with the COVID-19 pandemic. In total, 62.5% of survey respondents indicated that the program helped them overcome challenges associated with the COVID-19 pandemic. Loss of income ($N=21$) followed by food insecurity ($N=13$), and loss of family, friends or loved ones ($N=11$) were the most reported challenges. In the focus groups, participants commented on how the process of growing one’s own food at home created a sense of safety during the

pandemic, during which trips to the grocery store could present risk and anxiety for some. One participant commented,

Well, you know what, when the pandemic first started, you remember how terrible it was, where people were worried about going to the stores and, going grocery shopping, thinking that they would catch COVID. And I just felt like, okay, if I plant my own vegetables I will feel more safe getting it from the outdoors.

Finally, during the focus groups several participants who were also teachers described how the kits provided an important connection to the school and were therapeutic for participants. One participant shared,

We have a very, very active gardening team at our school. And with the pandemic, they were not able to garden. They were not able to go to school. It was something that was shut down. I think that receiving [the grow kit] was a gift to them that they can do at home. It was like taking a little piece of what they did at school home, and I think that was a connection that we needed for the pandemic, the relationship between the school and at home. I think that was another therapeutic thing for them.

Discussion

Home gardening has potential to address food security in urban communities, but the benefits of these programs are understudied. Chicago Grows Food (CGF) conducted a participatory evaluation (PE) of their novel Grow Your Groceries (GYG) program to better understand the impact of interventions that seek to build the capacity for food insecure households to grow their own healthy food. Although previous studies investigated the benefits of home gardening [17–19], this is the first study of a program that uses fabric grow bags as the growing media for a home gardening program. The findings of this evaluation identify factors that may help participants engage more deeply and be more successful in such programs in order to maximize their impact.

Our findings indicate that most participants reported high levels of confidence in growing their own food and high likelihood of growing their own food again. Our findings also indicate that participating in GYG helped most participants eat healthier food and made it easier for them to access healthier food. Though we anticipated many of these outcomes, we were surprised to learn about the family, community, and personal growth benefits of the program. Through the focus groups and open ended survey responses, many individuals described using the grow kit with members of their family and how doing so contributed to a sense of closeness. Over 75% of respondents reported using the

grow kit with other adults and/or children in their household. Some focus group and survey respondents were also teachers in public schools, and these individuals described using the grow kits in their classroom and building community with their student's families around growing food in the grow kits. Another surprising finding was how the grow kits helped individuals overcome challenges associated with COVID-19 including food insecurity, loss of friends or family, neighborhood violence, and mental health challenges including anxiety, depression, and loneliness. Finally, we heard and read short stories about individuals learning to grow their own food using the grow kits. Many felt accomplished and like they had achieved personal growth through the experience.

Many of our findings related to food security, healthy food access, and community connections are supported by other evaluations of home and community garden programs. Other studies have found that individuals who grow their own food report increased access to healthy food [18, 30, 31], increased consumption of healthy food [20], and improved food security [19]. Additionally, a study by Gray et al. [18] of home gardeners in San Jose, California found that a majority of respondents reported that home gardening positively impacted their interaction with neighbors, made them feel like part of a community, and helped them make new friends, which aligns with our findings related to community. Previous research suggests that home gardening may be more frequent or more effective within contexts which already include social networks that encourage gardening [32, 33].

The results of this study help to identify important potential barriers and facilitators to participant success in home gardening programs. Of respondents, 77.6% reported experiencing at least one barrier while participating in the GYG program. Knowledge of gardening, insect and animal pests, and access to outdoor space to grow were the most common barriers, which align with other studies which found the same barriers to home gardening [21, 22, 24, 25, 34]. Though not outcomes of this current study, other studies identify lack of time, too much shade, cost, soil, mobility, and support as barriers to growing food [21, 23–25].

Study Limitations and Strengths

This study is not without limitations. First, the study was cross-sectional, using a single group post-test design. Therefore, findings cannot be generalized outside of the GYG communities that CGF engages. Additionally, the single group post-test design does not allow us to have a baseline measurement or control group with which to compare our post-program findings. Third, our sample for the study was a convenience sample of GYG program participants. These participants self-selected to participate in the GYG program

and receive a free garden kit and education resources for doing so. As a result, our sample may be biased.

This evaluation also had several strengths. Primarily, the evaluation was participatory, which means evaluation tools were co-designed by program members and informed by program participants. The approach further grounded our data collection process in the experiences and knowledge of the population that CGF engages. Participants provided systematic feedback on the wording of questions and on the topics that the questions addressed, ensuring that research protocols aligned with the program context and the lexicons and worldviews of program participants. Furthermore, the evaluation utilized mixed methods, allowing us to collect data that had both breadth and depth of meaning. The use of a participatory, mixed-methods design thus resulted in a more holistic picture of participant experiences and program outcomes, while strengthening the utility and relevance of the results.

Conclusion

Innovative home gardening programs like GYG created by CGF can improve access to healthy food as a precursor to improving food security while providing other benefits including community connection, confidence in growing and preparing food, and a desire to grow one's own food. As more interventions seek to foster food growing within households, research should continue to include PE to ensure that the evaluation makes sense to community members and is rooted in community-centered outcomes. Future iterations of the GYG program should integrate the findings of this evaluation to maximize program benefits. For example, future iterations of the GYG program could include more community building opportunities as a way for growers to establish a support network to bolster their food growing journey. GYG could also include education opportunities and program modifications targeted to address the most common barriers that participants experience. Finally, CGF should ensure that GYG reflects the cultural backgrounds of program participants by providing culturally relevant seeds and seedlings, and by ensuring that all materials are available in Spanish. Program benefits could be expanded by providing families with more than one grow kit or helping them establish larger home gardens. Finally, CGF should conduct a program evaluation targeting a larger sample size to further assess the impact of the program. Although the results from the evaluation should not be generalized to other populations, GYG can serve as a program model for a new method of home gardening to improve food security in urban areas. Policymakers can also benefit from understanding

the social, economic, and nutritional benefits of ensuring that food insecure populations have access to growing resources, even at the micro level of growing in fabric grow kits.

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Author Contributions MK, SL, and HR contributed to the study conception and design. Data collection materials were drafted and approved by MK, SL, and HR. Qualitative data analysis was conducted by SL and LC while MK conducted the quantitative analysis. The first draft of the manuscript was written by MK and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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Data Availability The data that support the findings of this study are available from the corresponding author upon request.

Code Availability Data were analyzed using SPSS (quantitative) and Microsoft Word (qualitative). Codes are available from the corresponding author upon request.

Declarations

Conflict of interest The authors declare that they have no conflict of interest relevant to this article to disclose.

Ethical Approval IRB exemption was granted by the University of Illinois at Chicago for this study.

Informed Consent Not applicable.

Consent for Publication Not applicable.

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