Building Sustainable Neighborhoods through Community Gardens: Enhancing Residents' Well-being through University–Community Engagement Initiative

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Abstract

Building communities through creative community garden projects is increasingly common and seems to create beneficial effects for participants. This study recognizes the need to understand the impact of gardens on low socioeconomic neighborhoods. By conducting a needs assessment study and establishing a community garden, we were able to study its impact on residents of a neighborhood in Bakersfield, California. Data were collected from residents and garden participants using surveys and focus groups. Findings show overwhelming support for the garden and identify benefits of gardens on physical and mental health, social capacities, and spiritual health of individuals and neighborhoods. The study shows how such university community engagement initiatives provide a macro practice intervention framework for students, practitioners, and leaders.

Community gardens have become an effective tool able to aid in community building, increase neighborhood interaction and cohesion, reduce crime, establish neighborhood pride, and enhance neighborhood beautification. Previous community garden experiments in New York and Oakland specifically have shown several positive outcomes (Correia 2005; Cotel 2005). For example, the New York garden project donates more than seven hundred pounds of food to local soup kitchens and sells close to $4,000 worth of food to nearby farmers' markets. The Oakland garden has grown to become an alternate for vegetable shops and provides access to fresh produce at affordable prices. These projects show that community gardens are assets to their communities.

Additionally, community gardens are often used as "open air gardens." Open air gardens are classrooms located outside, in which students are encouraged to interact with nature. This interaction has been shown to be a powerful educational tool, as it motivates and engages students in their learning process (Scott, Boyd, and Colquhoun 2013). Some of these gardens are designed to become "open-air classrooms," providing education to the public on many subjects, from gardening and nutrition to

physical education and personal well-being. The regular classes and events hosted at the gardens are for local community members (Siewell and Aguirre 2013).

Studies show that community gardens contribute to individuals' physical benefits in terms of health, obesity, improved food choices (Twiss et al. 2003; Van den Berg et al. 2010), mental health benefits for individuals and groups (Stuart 2005), social benefits (Alaimo, Reischl, and Allen 2010; Beilin and Hunter 2011; Evers and Hodgson 2011), spiritual benefits (Unruh and Hutchinson 2011), and any combination of these. Several social benefits of community gardens are also linked to the sustainability of urban environments (Beilin and Hunter 2011) and to increasing the social capital and the value associated with a community or neighborhood (Alaimo, Reischl, and Allen 2010).

Given these beneficial outcomes of community gardens, it is important to further explore this area by assessing the need for community gardens and documenting the impact of gardens on low socioeconomic neighborhoods and rural areas. Against this backdrop, the current study focuses on the Langston and Jonah neighborhood situated in the Greenfield community in Bakersfield, California. Bakersfield was recently named America's Hungriest City with 21 percent of the residents in Kern County being food insecure (Food Research and Action Center 2013). The Center for Disease Control and Prevention (2014) indicates that Kern County residents' health is the worst of any county in California, and that "more than 60 percent of Kern County's population is considered obese." In addition, 22.5 percent of individuals in Kern County live below the poverty level (US Census 2011). The Kern County Community Needs Assessment (2012) identifies Kern County in the worst quartile for high violent crimes with a rate of 586.5 crimes per 100,000 populations (Healthy Kern n.d.).

In view of the above, it is important to assess the need for community gardens and examine the positive outcome it could have on these neighborhoods. It is also evident from the literature that community gardens may contribute in some ways toward possible solutions to social problems, and they may have a salutary impact on building sustainable neighborhoods. This project was part of a university community engagement initiative in which graduate level social work students from California State University, Bakersfield, worked closely with community members and local agencies to establish a community garden in a low socioeconomic neighborhood in Bakersfield, California. Several different agencies and individuals were involved in the creation of the garden such as nonprofit agencies, civic agencies, elected officials, and local groups dedicated to making their community a better place for all. This paper documents the findings of a needs assessment study and the successful implementation of a community garden project, as well as its benefits and impact on the surrounding neighborhood and those involved with its creation and maintenance.

Literature Review

An in-depth review of the existing literature shows that the benefit of community gardens is an area that is empirically studied by several researchers. Although these studies are different and diverse in nature, scope, and methodologies, they can be

grouped into four categories or domains in terms of the benefits of community gardens, namely, physical health and well-being benefits, mental health benefits, social benefits and sustainability, and spiritual benefits.

Physical Health and Well-being

Carney et al. (2012) conducted a study in the United States to explore the effects of community gardening on produce consumption, food security, and relationships within families in a rural Oregon community. Their findings indicated that participants' community garden involvement improved their overall health and that the produce intake of all participants increased significantly. The introduction of and involvement in local community gardens have been linked to an increase in physical activity and healthy lifestyle, as well as a reduction in health complaints among garden participants (Van den Berg et al. 2010; Twiss et al. 2003).

Researchers have also examined the correlation between body mass index (BMI), demographics, level of physical activity, and other health-related factors. Litt et al. (2011) showed a significant reduction in BMI for individuals involved in gardening activities. Several other studies have reported similar findings documenting a decrease in obesity associated with gardening activities and community garden involvement (Castro, Samuels, and Harman 2013; Davis et al. 2011; Zick et al. 2013).

Mental Health

In addition to the physical health benefits reported previously, the literature review also revealed a link between community gardens and gardening in general with improved mental health. For example, Carney et al. (2012) found a relationship between stress reduction, increased relaxation, increased self-esteem, confidence, and a positive sense of passing time with gardening activities. Studies by Mecham and Joiner (2012), Okvat and Zautra (2011), and Van den Berg et al. (2010) provide similar results. Stuart (2005) suggests that gardening made adjustment to life in domestic violence shelters easier for residents, relieved stress, absorbed negativity, provided a peaceful retreat, and instilled hope upon participants seeing growth of plants. The study further indicated that nurturing plants and producing food provided empowerment, a connection to one's cultural heritage, and is a cross-cultural unifier.

Along similar lines, Gonzales et al. (2011) and Unruh and Hutchinson (2011) have shown that participating in community activities can decrease some symptoms of depression and provide purpose for individuals. Gardening has also been associated with reducing the risk of developing dementia and has been shown to be effective at improving cognitive functioning among the elderly (Fabrigoule et al. 1995; Simons et al. 2006; Thelander et al. 2008; Tse 2010).

Social Benefits and Sustainability

There are a few major themes emerging within literature discussing the benefits and impacts of community gardens on society and communities. These social impacts generally were measured in terms of sustainability, social capital, and specific social

outcomes associated with community gardens. "Social capital" has been identified as an underlying theme that is often emphasized in the literature reviewed. In the literature (or in this context), it is conceptualized as a measure of the connectedness (or lack thereof) and relationships between both individuals and groups within a community (Alaimo, Reischl, and Allen 2010; Draper and Freedman 2010). Social capital, then, is a measure of both intrinsic and extrinsic value of a neighborhood, community, or region, as perceived by that area's residents, be it individuals or groups within or outside the area. A recent study on intergenerational mobility in the United States identified a correlation between social capital and income mobility—those living in areas with greater social capital were more able to move into higher income brackets and, in some instances, overcome poverty (Chetty et al. 2014). Increased levels of social capital help individuals by providing them with protective factors in the form of strong social ties, which fosters positive growth of communities.

Alaimo, Reischl, and Allen (2010) found that involvement of residents in community projects such as community gardens increased the level of social capital by helping people make connections with their neighbors and by making them more aware of neighborhood organization. Similarly, Firth, Maye, and Pearson (2011) emphasized the effectiveness of community gardens in bringing people together and building stronger communities. The study reports that there are four ways that community gardens can create social capital: they get people to come together and provide a shared objective and purpose, which creates a sense of ownership and pride for participants; they provide a place for individuals in the community to meet, which allows interaction and community creation; the things that happen in the garden, i.e., growing, cooking, and eating food, are social activities that allow people to interact and bond; and gardens help link communities to organizations and political and governmental authorities (Firth, Maye, and Pearson 2011).

Several studies have identified "sustainability" factors highlighted by community gardens affecting ecosystems and urban life style. Beilin and Hunter (2011) compared two community gardens in Australia and showed how community gardens can contribute to the sustainability of a city as measured empirically via the Victorian Government-approved community indicator framework (the Community Indicators Victoria, aka, CIV). The study linked a sustainable community with the existence of community gardens in the communities studied by CIV measurements. It was shown that increased biodiversity was among the ecological benefits of the gardens studied. Similar findings were mirrored in studies done in the United Kingdom and Ireland (Clavin 2011), Berlin (Colding and Barthel 2013), and the United States (Macias 2008).

Turner (2011) stresses the importance of understanding where food comes from in order to maintain sustainable cities and healthy lifestyle. Additionally, Turner discussed the idea of "embodied sustainability" as being the notion that we are not passive beings, but "actors in and on the world"; that "we know and produce the world through our bodies" (Turner 2011, 515). Community gardens are physical representations of this concept of being, and Turner argues that this concept must be recognized in order to make community gardens successful in bringing about

sustainability through strong, vibrant communities and empowered individuals. A community's ability to sustain itself is directly related to its collective health, strength, and viability.

Several other social benefits are cited in the literature. For example, Evers and Hodgson (2011) found that community gardens have benefits such as increased food security, increased self-efficacy of individuals, and enhanced positive relationships. Reduction of local crime and neighborhood revitalization is associated with the findings of multiple studies on community gardens (Gorman et al. 2009; Henderson and Hartsfield 2009; Okvat and Zautra 2011). Additional benefits of community gardens discussed in the literature include expression of values and creativity, benefit of neighborhood beautification, an increase in community pride (Flachs 2010; Litt et al. 2011; Okvat and Zautra 2011), increased education about the natural world and food (Flachs 2010), binding neighborhoods cross-culturally (Stuart 2005), and empowering and building individual and social resilience for those involved in garden projects (Henderson and Hartsfield 2009; Okvat and Zautra 2011).

Spiritual Benefits

Finally, there are some key spiritual benefits associated with community gardening. The deep connectedness fostered through gardening activities and cultivating the soil is a way to create strong bonds between gardeners and their communities, as well as an invaluable way for individuals to learn more about themselves. In Flachs (2010), it was found that participating in community urban gardening helps one develop his or her own identity. The study reported that community gardening is a way to be creative, to express one's values, and to make a positive impact on one's community and the environment. Similarly, gardening activities fostered a sense of belonging with the natural world (Litt et al. 2011). This ties in with Turner's (2011) concept of embodied sustainability, which reflects many gardeners' view that soil in their garden was an active partner in the growing process. Similar findings were also reported by Unruh and Hutchinson (2011), whose results indicated that gardeners experienced a connectedness with their garden and a feeling of positive inner being associated with their gardening activities.

An extensive review of literature on community gardens indicates that there is a dearth of empirical studies documenting the need for community gardens in lower class areas and rural suburbs with relatively high poverty and unemployment rates. This study focuses on such a neighborhood within the Greenfield community in Bakersfield, California, where there is a strong presence of underrepresented minority population. Distinguishing it from most other research, this study focuses not only on assessing the need but also on documenting the impact after the implementation of the community garden. Thus, the study links the assessed need and identified benefits with the impact of the garden on the community. In view of this, the objectives of the study are to assess the need for a community garden in the Jonah/Langston neighborhood, to identify the benefits of community gardens as perceived by neighborhood residents, and to assess the impact of the garden on the neighborhood. The three main research

questions related to these objectives are: What is the nature and level of participation of the residents in the community garden? What are the potential benefits of community gardens? What has been the impact of the community garden on the Jonah/Langston neighborhood?

Methodology

The needs assessment study used a convenience sampling method. The selection of the sample group was based on participants' willingness to complete a two-page questionnaire, which resulted in ninety-five participants who lived in the Greenfield neighborhood near the corner of Jonah and Langston Streets in Bakersfield, California. The participants in the study lived within a mile radius surrounding the selected community garden site, and all participants were over the age of eighteen. The research protocol was approved by the Human Subject Review Board of California State University, Bakersfield, prior to the commencement of the data collection phase. Data were collected using a questionnaire, which was created in both Spanish and English. A pilot test was conducted before the data collection in order to assure the quality of the instrument and the information acquired.

The questionnaires were completed by the participants and collected by the investigators going door to door during March 2013. Participants were asked to read and sign an informed consent form, complete the questionnaire, and return it to the investigators. The questionnaire consisted of questions on demographic variables, their willingness to participate in the garden, their level of participation, and their concerns about the community garden in their neighborhood. Additionally, participants were asked to identify reasons to participate in the community garden. Finally, a Likert scale was utilized to identify how important selected benefits of community gardens were to study respondents. Each respondent was asked to rate five different items on a one to five scale with "one" representing "not very important" and "5" representing "very important." The collected data was checked for accuracy and was analyzed using Statistical Package for Social Sciences (SPSS) 21.0 software.

To assess the impact of the community garden, data were collected using focus groups. Two focus groups were conducted. One group consisted of two members and the other consisted of nine members. Participants were individuals who either live near the garden, took part in creation of the garden, worked in the garden, or any combination of these. Data were collected using a focus group questionnaire. The questionnaire was translated into Spanish to collect data from non-English speaking participants. A Spanish translator helped collect the data. The translator signed a confidentiality agreement to protect information covered in the focus groups and to protect the identity of focus group participants. The major themes explored in the questionnaires include the benefits and rationale behind community gardens, specifically in terms of the social and health benefits, and reasons to participate in community gardens. The focus group data was content-analyzed to identify major themes on the impact of the garden on the neighborhood.

Findings

Demographic Characteristics of the Needs Assessment Survey

Out of the ninety-five respondents, 40 percent were males and 60 percent were females (see Table 1). The ages of the study participants ranged from nineteen to seventy-one, with a mean age of 36.52. In terms of ethnicity, most of the participants identified as Hispanic or Latino (68.8 percent), while the remaining participants were either African American (12.9 percent), Caucasian/White (12.9 percent), Pacific Islander/Asian (1.1 percent), or other (4.3 percent). More than half of the respondents were employed (67.4 percent). Out of the employed respondents, 56.7 percent worked in a full-time job, and 13.4 percent worked part-time jobs. However, a substantial segment of respondents did not respond to questions about current occupation. The top three occupations of respondents were sales, grocery, and cosmetology (10.5 percent), homemakers (8.4 percent), and health care, caregivers, and certified nurse's aides (6.3 percent). Additionally, 8.4 percent of respondents indicated that they were unemployed and/or disabled. With respect to their education, nearly half of the respondents reported high school education or less (49.4 percent), followed by some college (21.1 percent), college degree (14.7 percent), other (9.5 percent), trade/technology school (3.2 percent), and attending college (2.1 percent).

Table 1. Demographic Characteristics

Variables	Frequency	Valid Percent
Gender		
Male	38	40.0
Female	57	60.0
Ethnicity		
African American	12	12.9
Asian/Pacific Islander	1	1.1
Hispanic/Latino	64	68.8
Caucasian/White	12	12.9
Other	4	4.3
Employment		
Employed	64	67.4
Unemployed	31	32.6
Education Obtained		
High School or less	47	49.4
Some College	20	21.1

Attending College	2	2.1
College Degree	14	14.7
Tech/Trade School	3	3.2
Other	9	9.5

Level of Participation

The data and findings showed that residents of the Jonah/Langston neighborhood expressed unanimous support for this project. Over three-fourths of the respondent's indicated that they were willing to participate in a community garden if one was in their neighborhood (77.4 percent), while the remaining respondents indicated that they preferred not to participate (see Table 2). Of those who wanted to participate in a community garden, 47.4 percent wanted to participate as a garden volunteer (i.e., use the garden to grow vegetables and maintain it), 15.8 percent wanted to participate as donors, and 1.1 percent wanted to participate as an educator, if possible. The remaining respondents either did not report a participation preference (18.9 percent) or reported other, e.g., garden maintenance (16.8 percent).

Table 2. Participants' Willingness to Participate

Variables	Frequency	Valid Percent
If there were a community garden in your neighborhood, would you like to participate?		
Yes	72	77.4
No	21	22.6

A significant majority of the respondents (91.5 percent) did not report having any specific concerns about a community garden in their neighborhood. The remaining respondents reported having three main concerns about the community garden project being implemented in their neighborhood: vandalism and/or theft of garden equipment and property (5.3 percent), concerns about maintenance of the garden (1.1 percent), and other/unspecified concerns (2.1 percent).

Reasons to Participate in a Community Garden

Reasons to participate in the garden were broken down into two main benefits groupings—health and educational reasons (see Table 3), and social and recreational reasons (see Table 4). The study indicated that opportunity to socialize (93 percent) and the opportunity to work and exercise (92 percent) were the main reasons respondents wanted to participate in a community garden.

Table 3. Health and Educational Reasons to Participate

Variables	Frequency	Valid Percent
Access to Fresh Vegetables		
Yes	77	85.6
No	13	14.4
Opportunity to Work and Exercise		
Yes	83	92.2
No	7	7.8
Education (i.e., learning about the benefits of community gardening)		
Yes	76	85.4
No	13	14.6

Table 4. Social and Recreational Reasons to Participate

Variables	Frequency	Valid Percent
Save Money on Monthly Food Expenses		
Yes	75	84.3
No	14	15.7
Opportunity to Socialize		
Yes	83	93.3
No	6	6.7
Additional Recreational Time		
Yes	77	88.5
No	10	11.5
Difficulty Finding Food in Local Grocery Store		
Yes	39	45.3
No	47	54.7

Benefits of Gardening

The study further identified potential benefits of community gardens, and these included promoting community building, promoting neighborhood interaction, adding to neighborhood pride, adding to neighborhood beautification, and reducing neighborhood crime. The findings clearly indicate that respondents strongly consider these benefits as being important to them and to their community. Although there are variations in the mean scores on the benefits of gardening, neighborhood beautification was rated as the most important benefit (see Table 5).

Table 5. Mean Score Analysis of Benefits of Gardening

Variables	Frequency	Mean
Promotes Community Building	95	4.26
Promotes Neighborhood Interaction	94	4.36
Adds to Neighborhood Pride	95	4.37
Adds to Neighborhood Beautification	95	4.41
Reduces Crime	94	4.26

Impact of the Community Garden

Focus group data was content-analyzed in order to assess the impact of the garden on the community and its residents. In terms of physical health benefits, several focus group participants pointed out improvement in participants' and their family's eating habits and lifestyles. For example, one focus group participant gave a personal account on how the garden is having a positive effect on her family, saying, "One of the things that the community garden has brought is that we are eating healthier, and we are showing our kids how to eat healthier."

For some respondents, the community garden has been a place to quiet the mind and meditate on the moment. One focus group participant claimed that "the garden is used as a therapy where we can come and forget about everything." Some participants felt that the garden has increased the value of homes in the surrounding area. One focus group participant stated, "Real Estate agents are talking about the community garden and how it affects the value of houses in the neighborhood." Further, some focus group participants noticed that many community residents are taking an interest in the community garden, as it contributes to the overall beautification of the neighborhood. Nearly all the participants stated that they have observed or spoken with community residents who wanted to get involved.

Prior to being a community garden, the lot on which the garden has been planted was utilized for illegal activity including illegal dumping of trash. Now, the community garden has been identified as a source of neighborhood beauty and pride. One participant noted, "There is no illegal dumping on site. It is very pretty, and it has definitely made the community nicer in general." A few focus group participants have

noticed that the community garden has contributed to an increased sense of community, not only among individuals working in the garden, but also among individuals in the neighborhood. One focus group participant went on to state that "the community garden keeps us active and it brings families together."

Several of the respondents also felt that the community garden has had an effect on the participants' knowledge and awareness of sustainability practices. Participants reported making more organic food choices as a result of participating in the garden. One participant stated how the garden is being utilized to teach residents about composting, stating, "Here at the garden and as a group, we are using the things we take out of the garden to make compost." Community garden participants also reported that they are learning more about how food is grown and the local environment. Another participant reported making more sustainable, eco-friendly choices, reporting of her family that, "We sometimes come to the garden walking, rather than using the car." Finally, the garden participants have plans to incorporate the garden into educational opportunities for the nearby elementary and junior high schools in order to further utilize the garden as an open-air classroom.

Discussion

The purpose of the study was to assess the need for a community garden, identify potential benefits of community gardens, and to examine the impact of the community garden on the neighborhood surrounding the selected garden site. As expected, findings indicate that there was almost unanimous support for the garden among the study participants. Clearly, people in this neighborhood considered a community garden to be an important addition and asset to their community. Similarly, it is important to note that most of the respondents were able to identify benefits associated with community gardens. This implies that the residents in this area are aware of and possibly knowledgeable about the potential benefits of community gardens.

For a significant majority of the respondents, important reasons to participate in this community garden were increased opportunities to socialize with neighbors and increased opportunities to work and exercise. This finding is congruent with several studies, which explored the benefits of community gardens on mental health (Carney et al. 2012; Gonzales et al. 2011) and building social capital in neighborhoods (Alaimo, Reischl, and Allen 2010; Firth, Maye, and Pearson 2011). While community gardens have been shown to effectively prevent obesity (Castro, Samuels, and Harman 2013; Davis et al. 2011; Zick et al. 2013), involvement in garden activities has also been found to increase physical activity and healthy life style of participants (Twiss et al. 2003; Van den Berg et al. 2010). Additionally, most survey respondents reported that community gardening can provide them with additional recreation time and can save them money on their monthly food expenses.

Almost half of all respondents indicated that access to fruits and vegetables was not a problem for them. This may show that most of the people in the Jonah/Langston neighborhood surveyed in this study have access to fruits and vegetables. It may be

concluded from this result that the Jonah/Langston garden is perhaps desirable to respondents on a more social and ascetic level. As shown in Flachs (2010), Litt et al. (2011), Evers and Hodgson (2011), and Okvat and Zautra (2011), community gardens have the capacity to meet these needs while simultaneously increasing the pride community members have in their neighborhood.

All the benefits identified in the study had a mean rating of above "four" out of a maximum of "five" in terms of importance. Thus, findings show that there is no significant variation in terms of benefits of gardening. The mean score analysis indicated that neighborhood beautification was the most important benefit associated with community gardens. In this context, it is worthwhile to note that most of the benefits identified were social benefits that could potentially increase the social capital of the neighborhood. In this regard, Alaimo, Reischl, and Allen (2010) found that creating a higher degree of social capital can lead to increased perception of responsibility for and connection to one's community. This study also shows that community building is a benefit strongly desired by community garden members.

In terms of the impact of the community garden, the focus group findings show that many of the benefits identified as desirable in the needs assessment study had come to fruition. Focus group respondents also indicated benefits not explored in the needs assessment study but identified in the literature on community gardens. As reported by Carney et al. (2012), Van den Berg et al. (2010), and Twiss et al. (2003), the focus group respondents who worked in the garden reported that they had improved their eating habits and that they were leading a more active lifestyle. The focus group respondents also said that participating in the garden helped them quiet their minds and better appreciate the present. These themes are consistent with the findings of Carney et al. (2012), Mecham and Joiner (2012), Okvat and Zautra (2011).

Study participants also identified key social benefits associated with community gardens. For example, individuals stated that the value of the homes in the garden neighborhood has increased. Although it is unclear of a direct link between the increase in value and the garden, it is clearly evident that the garden is a prominent feature of the neighborhood, which adds to the overall worth of the community for residents and non-residents alike. Participants also reported that the garden has helped bring the neighborhood together and that the garden promotes an actively involved community lifestyle. These findings are similar to those of Evers and Hodgson (2011), Flachs (2010), Litt et al. (2011), and Okvat and Zautra (2011), where they indicate a clear increase in social capital of the neighborhood benefiting individuals, families, and the greater community. Additionally, the garden has become a place to learn about sustainability and sustainable practices (i.e., composting, buying locally and organically grown food, and learning about how food is grown). Focus group participants also report that involvement with the garden has been a valuable learning experience that has helped teach participants about the origins of their food and the local environment.

Limitations

Although the findings of this study add to the existing literature, there are some limitations. The study employed a convenience sample of residents living in the Jonah and Langston neighborhood in Bakersfield, California. Such a sampling method may not provide a cross-sectional random representation of the population living in the neighborhood, which in turn may limit generalization beyond the study population. Also, the opinions and perceptions of people who live in this neighborhood may be different from other neighborhoods, which may limit the study's ability to draw conclusions about other communities. The demographic composition of the sampled area is unique with a strong presence of Hispanics/Latinos. To this extent, the findings will likely dominate the opinion of one particular group. These factors serve as external threats to the generalizability of the study's findings to other settings.

Conclusion

The study and its findings reveal several benefits and implications for the Jonah/Langston neighborhood and for the larger community where the garden was established. This study and project were part of a university–community engagement initiative in which graduate level social work students worked in partnership with community members and local agencies to establish a community garden in a low socioeconomic neighborhood. Social work educational programs can replicate such university-community collaborative models for engaging students in community practice. It demonstrates how such neighborhood development projects can be effective macro intervention learning tools for students, community practitioners, and community leaders.

Community problems are often complex, and it takes adequate resources and assets to rebuild and rejuvenate communities like the Jonah and Langston neighborhood. As shown by the literature and our findings, community gardens can be an effective tool to achieve varied community improvement goals. Community practitioners and leaders can adopt such collaborative models as part of a plan to address community deficits and to increase community assets. This may play an important role in raising awareness of organic food and healthy eating.

The garden has become a community gathering place, bringing families and neighbors together, which in turn has fostered a tighter-knit, stronger community. The study shows how the garden provides peace, beauty, and a sense of pride for people in the neighborhood, and it has helped participants by teaching them more about sustainability and sustainable practices in urban life. These are community assets that build social capital which in turn can improve social relationships and develop social leadership in community residents. Findings show how the community garden brought several community agencies and community members together in solving their problems, meeting their needs, and in building community assets. These findings can provide an intervention framework for students, community practitioners, and leaders alike.

References

Alaimo, Katherine, Thomas M. Reischl, and Julie Ober Allen. 2010. "Community Gardening, Neighborhood Meetings, and Social Capital." *Journal of Community Psychology* 38 (4): 497–514. doi:10.1002/jcop.20378.

Beilin, Ruth, and Ashlea Hunter. 2011. "Co-Constructing the Sustainable City: How Indicators Help Us 'Grow' More Than Just Food in Community Gardens." *Local Environment* 16 (6): 523–538. doi:10.1080/13549839.2011.555393.

Carney, Patricia A., Janet L. Hamada, Rebecca Rdesinski, Lorena Sprager, Katelyn Nichols, Betty Liu, Joel Pelayo, Maria A. Sanchez, and Jacklien Shannon. 2012. "Impact of a Community Gardening Project on Vegetable Intake, Food Security, and Family Relationships: A Community-Based Participatory Research Study." *Journal of Community Health* 37 (4): 874–881. doi:10.1007/s10900-011-9522-z.

Castro, Dina C., Margaret Samuels, and Ann E. Harman. 2013. "Growing Healthy Kids: A Community Garden-Based Obesity Prevention Program." *American Journal of Preventive Medicine* 44 (s3): S193–S199. doi:10.1016/j.amepre.2012.11.024.

Centers for Disease Control and Prevention. 2014. National Healthy Worksite Program, *National Healthy Worksite Program Communities, Kern County, California*. http://www.cdc.gov/nationalhealthyworksite/communities/kern-county.html.

Chetty, Raj, Nathaniel Hendren, Patrick Kline, and Emmanuel Saez. 2014. "Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States." (Working Paper 19843). Retrieved from National Bureau of Economic Research website: http://www.nber.org/papers/w19843.

Clavin, Alma. 2011. "Realising Ecological Sustainability in Community Gardens: A Capability Approach." *Local Environment* 16 (10): 945–962. doi:10.1080/13549839.2011.627320.

Colding, Johan, and Stephan Barthel. 2013. "The Potential of 'Urban Green Commons' in the Resilience Building of Cities." *Ecological Economics* 86: 156–166. doi:10.1016/j.ecolecon.2012.10.016.

Correia, Margarida. 2005. "Harvest in the City: New York Gardeners Bring Fresh, Healthy Food to the Less-Affluent." *Earth Island Journal* 20 (3): 34–36.

Cotel, Orli. 2005. "A Moveable Feast." *Sierra* 90 (6): 8–8.

Davis, Jaimie N., Emily E. Ventura, Lauren T. Cook, Lauren E. Gyllenhammer, and Nicole M. Gatto. 2011. "LA Sprouts: A Gardening, Nutrition, and Cooking Intervention for Latino Youth Improves Diet and Reduces Obesity." *Journal of the American Dietetic Association* 111 (8): 1224–1230. doi:10.1016/j.jada.2011.05.009.

Draper, Carrie, and Darcy Freedman. 2010. “Review and Analysis of the Benefits, Purposes, and Motivations Associated with Community Gardening in the United States.” *Journal of Community Practice* 18 (4): 458–492. doi:10.1080/10705422.2010.519682.

Evers, Anna, and Nicole L. Hodgson. 2011. “Food Choices and Local Food Access among Perth’s Community Gardeners.” *Local Environment* 16 (6): 585-602. doi:10.1080/13549839.2011.575354.

Fabrigoule, Colette, Luc Letenneur, Jean François Dartigues, Mounir Zarrouk, Daniel Commenges, and Pascale Barberger-Gateau. 1995. “Social and Leisure Activities and Risk of Dementia: A Prospective Longitudinal Study.” *Journal of the American Geriatrics Society* 43 (5): 485–490.

Firth, Chris, Damian Maye, and David Pearson. 2011. “Developing ‘Community’ in Community Gardens.” *Local Environment* 16 (6): 555–568. doi:10.1080/13549839.2011.586025.

Flachs, Andrew. 2010. “Food for Thought: The Social Impact of Community Gardens in the Greater Cleveland Area.” *Electronic Green Journal* 1 (30): 1–9.

Food Research and Action Center. 2013. *Food Hardship in America 2012: Data for the Nation, States, 100 MSAs, and Every Congressional District*. http://frac.org/pdf/food_hardship_2012.pdf.

Gonzales, Marianne T., Terry Hartig, Grete G. Patil, Egil W. Martinsen, and Marit Kirkevold. 2011. “A Prospective Study of Existential Issues in Therapeutic Horticulture for Clinical Depression.” *Issues in Mental Health Nursing* 32 (1): 73–81. doi:10.3109/01612840.2010.528168.

Gorman, Michelle R., Tina M. Waliczek, Amy Snelgrove, and Jayne M. Zajicek. 2009. “The Impact of Community Gardens on Numbers of Property Crimes in Urban Houston.” *Hort Technology* 19 (2): 291–296.

Healthy Kern. n.d. *Healthy Kern: Better Health through Community*. Accessed April 22, 2014. http://www.healthykern.org/.

Henderson, Bethany, and Kimberly Hartsfield. 2009. “Is Getting into the Community Garden Business A Good Way to Engage Citizens in Local Government?” *National Civic Review* 98 (4): 12–17. doi:10.1002/ncr.271.

Kern County QuickFacts from the US Census Bureau. n.d. *Kern County QuickFacts from the US Census Bureau*. Accessed April 22, 2014. http://quickfacts.census.gov/qfd/states/06/06029.html.

Litt, Jill S., Mah-J Soobader, Mark S. Turbin, James W. Hale, Michael Buchenau, and Julie A. Marshall. 2011. "The Influence of Social Involvement, Neighborhood, Aesthetics, and Community Garden Participation on Fruit and Vegetable Consumption." *American Journal of Public Health* 101 (8): 1466–1473. doi:10.2105/AJPH.2010.30111.

Macias, Thomas. 2008. "Working Toward a Just, Equitable, and Local Food System: The Social Impact of Community-Based Agriculture." *Social Science Quarterly (Blackwell Publishing Limited)* 89 (5): 1086–1101. doi:10.1111/j.1540-6237.2008.00566.x.

Mecham, Neil A., and Lydia R. Joiner. 2012. "Even If We Never Ate a Single Bite of It, It Would Still Be Worth It." *Journal of Ethnographic & Qualitative Research* 6 (4): 231–242.

Okvat, Heather A., and Alex J. Zautra. 2011. "Community Gardening: A Parsimonious Path to Individual, Community, and Environmental Resilience." *American Journal of Community Psychology* 47 (3/4): 374–387. doi:10.1007/s10464-010-9404-z.

Scott, Graham, Margaret Boyd, and Derek Colquhoun. 2013. "Changing Spaces, Changing Relationships: The Positive Impact of Learning Out of Doors." *Australian Journal of Outdoor Education* 17 (1): 47–53.

Siewell, Nicholas, and Stephanie Aguirre. 2013. "Community Gardens Are Breaking Ground in Bakersfield." *The Bakersfield Californian*, April 25.

Simons, Leon A., Judith Simons, John McCallum, and Yechiel Friedlander. 2006. "Lifestyle Factors and Risk of Dementia: Dubbo Study of the Elderly." *The Medical Journal of Australia* 184 (2): 68–70.

Stuart, Susan M. 2005. "Lifting Spirits: Creating Gardens in California Domestic Violence Shelters." In *Urban Place: Reconnecting With the Natural World*, edited by P. F. Barlett, 61-88. Cambridge, MA: MIT Press.

Swaroop, Sapna, and Jeffrey D. Morenoff. 2006. "Building Community: The Neighborhood Context of Social Organization." *Social Forces* 84 (3): 1666.

Thelander, Verus B., Tarja-Brita R. Wahlin, Lotta Olofsson, Kristiina Heikkila, and Lars Sonde. 2008. "Garden Activities for Nursing Home Residents with Dementia." *European Journal of Physiotherapy* 10 (1): 53–56. doi:10.1080/14038190701256469.

Tse, Mimi Mun Yee. 2010. "Therapeutic Effects of Indoor Gardening Programme for Older People Living in Nursing Homes." *Journal of Clinical Nursing* 19 (7–8): 949-958. doi:10.1111/j.1365-2702.2009.02803.x.

Turner, Bethaney. 2011. “Embodied Connections: Sustainability, Food Systems, and Community Gardens.” *Local Environment* 16 (6): 509–522. doi:10.1080/13549839.2011.569537.

Twiss, Joan, Joy Dickerson, Shirley Duma, Tanya Kieinman, Heather Paulsen, and Liz Rilveria. 2003. “Community Gardens: Lessons Learned from California Healthy Cities and Communities.” *American Journal of Public Health* 93 (3): 1435–1439.

Unruh, Anita, and Susan Hutchinson. 2011. “Embedded Spirituality: Gardening in Daily Life and Stressful Life Experiences.” *Scandinavian Journal of Caring Sciences* 25 (3): 567–574. doi:10.1111/j.1471-6712.2010.00865.x.

US Census Bureau. 2011. *Community Facts, American Fact Finder.* http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.

Van den Berg, Agnes E., Marijke van Winsum-Westra, Sjerp De Vries, and Sonja M.E. Van Dillen. 2010. “Allotment Gardening and Health: A Comparative Survey among Allotment Gardeners and Their Neighbors without Allotment.” *Environmental Health: A Global Access Science Source* 9: 74-85. doi:10.1186/1476-069X-9-74.

Zick, Cathleen D., Ken R. Smith, Lori Kowaleski-Jones, Claire Uno, and Brittany J. Merrill. 2013. “Harvesting More Than Vegetables: The Potential Weight Control Benefits of Community Gardening.” *American Journal of Public Health* 103 (6): e1-e6. doi:10.2105/AJPH.2012.301009.

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