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Urban Farming: A Non-Traditional Intervention for HIV-Related Distress

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Abstract

As individuals with HIV are living longer with less morbidity, developing interventions that address co-morbidities are essential. Psychological distress symptoms fluctuate throughout HIV infection and interrupt self-care practices. This pilot study was conducted to test the implementation of a clinic-recruited sample to participate in a community-based urban farming intervention, and assess the efficacy of reducing psychological distress symptoms. While the changes were not statistically significant, participants reported less distress symptoms, improved overall general health, and reduced frequency of illicit drug use. These findings support the development of a larger scale study to examine the impact of this nontraditional intervention.

INTRODUCTION

With an estimated 56,000 new HIV cases annually, developing methods to better manage HIV and reduce risk of transmission are essential.¹ Furthermore, as individuals are living longer with HIV infection, quality of life issues and secondary prevention efforts have been increasingly incorporated into comprehensive care practices. It is well documented that individuals with HIV have significantly higher levels of psychological distress than the general population and are impacted by fluctuating levels of distress throughout the course of HIV infection.² During periods of distress, individuals with a chronic illness such as HIV not only have lower quality of life, but also have difficulty engaging in behaviors that are health-promoting.³ Managing these distress symptoms will help individuals with HIV more successfully manage their disease by adhering to medical care, medication, and reducing high-risk behavior engagement. Additionally, as HIV disproportionately affects low-income populations, issues of food security and access to fresh fruits and vegetables have become relevant topics to address in comprehensive care environments.⁴

Community gardens have been established as sources of neighborhood cohesion and enrichment throughout urban areas in the U.S. Specifically, community gardening offers

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social interaction, reduces stress, provides healthy leisure and physical activity opportunities, and psychological restoration. The social aspect of community gardens also has been shown to build social capital and increase a sense of community among participants.⁵ Furthermore, access and utilization of gardens and home grown produce have been shown to significantly increase daily fruit and vegetable intake. Community gardens have the potential to address both the limited access to grocery stores and inconsistent food sources for low-income populations.⁶

In low-income neighborhoods, food insecurity and limited access to healthy food, i.e. fresh fruit and vegetables, make the management of chronic diseases difficult.⁷ Community gardens and farmers' markets have been identified as integral components of the solutions necessary to increase healthy food access to neighborhoods that experience few opportunities. Many of these neighborhoods have few grocery stores and increased access to fast food establishments, which make healthy food choices difficult and have been shown to negatively impact chronic diseases;⁸ which has also been illustrated in high-poverty areas in the St. Louis region.⁹ As the number of community gardens increase in low-income neighborhoods, there has been greater recognition of their benefit, including increased food security and consumption of fruits and vegetables.¹⁰

Based on these research findings, we hypothesized that urban farming has the potential to address factors that are commonly experienced by individuals living with HIV as they are more commonly living in impoverished areas in the U.S. We utilized the concept of reciprocal determinism from the Social Cognitive Theory to anticipate that attitudes (psychological distress symptoms and social isolation) will be altered based on individual interaction with environmental factors (through participation in an urban farming activities) and thus, there will be reduced engagement in risk behaviors (substance use) and improved chronic disease-related behaviors (increased consumption of fruits and vegetables and physical activity) as a result of improved distress symptoms. This conceptual framework was developed in the context of HIV infection, while other chronic diseases may be applicable. The development of this intervention occurred through qualitative and quantitative research with individuals with HIV and who were experiencing difficulty managing their disease. Additionally, we expected that the social isolation that is repeatedly experienced in the context of HIV would be well-addressed by this type of intervention. Unemployment repeatedly arose as a factor that negatively influenced health outcomes, and therefore, we focused this intervention for people with HIV, who were currently unemployed, and expressed moderate to severe depressive symptoms.

This pilot study was developed and implemented in collaboration with a community-based organization that runs a local urban farm (www.gatewaygreening.org). The urban farm currently exists as a therapeutic endeavor and a jobs training program. The purpose of this study was to assess the feasibility of conducting an urban farming intervention aimed at reducing depressive symptoms among unemployed individuals with HIV and assessing its initial efficacy.

METHODS

This prospective, single armed intervention trial represents a collaborative effort between behavioral science research, clinical practice, and community-based practice to address depressive symptoms among a clinic-based sample of individuals with HIV who are unemployed through urban farming. The purpose of this study was to evaluate the feasibility of a research project to recruit participants from an outpatient clinic environment to work at an urban farm and measure changes in psychological distress and risk behaviors due to this intervention.

Recruitment and Eligibility

Potential participants were recruited from the Washington University HIV Clinic; which is an outpatient clinic that serves the Metropolitan St. Louis area. As part of standard of care, patients are routinely screened for psychological distress symptoms (depression, using the Patient Health Questionnaire-9), engagement in risk behaviors (alcohol and illicit drug use and frequency), and sociodemographic characteristics (including employment status). Eligibility criteria included employment status (unemployed for > 3 months), expressed depressive symptoms (PHQ-9 score of 10), 18 years old, and documented HIV infection. If a potential participant expressed interest in participating in the pilot intervention, the project coordinator assessed their frailty status, and the clinic director confirmed the eligibility of the participants. All eligible and interested patients signed an informed consent to participate in the study. This study was approved by Washington University School of Medicine Human Research Protection Office.

Baseline and post-intervention (8 weeks) assessments were identical; data collected included sociodemographic factors, symptoms of depression (as measured by the PHQ-9) and anxiety (as measured by the Generalized Anxiety Disorder-7), the general quality of life measure (SF-12), and frequency and quantity of alcohol and illicit drug use (adapted from the Substance Abuse Module). Semi-structured qualitative questions were asked at the post-measure to discuss the feasibility, benefits, and barriers of the intervention.

Intervention

Participants were asked to work on the urban farm 2 days each week for a total of 8 weeks. Work began at 7:30 am and ended at 11:30 am. Tasks at the farm varied depending on daily needs at the garden. A typical day began with announcements and a short presentation on a horticulture-related topic, including annuals, trees, shrubs, food systems, and insects. Participants would volunteer for various daily tasks, i.e. harvesting, weeding, mowing, watering, planting, and plant thinning. Participants received two, fifteen-minute breaks each day. Around 11:00am, all participants assisted with clean up and came together in the 'stump circle' to reflect on the day. One by one, each person shared details about their work and thoughts about the day. Each participant also kept a private journal for weekly activities including drawing, reflecting on a quote, or simply reviewing the events of the day.

Additional components of the program contributed to the intervention. Help from several volunteer groups are needed to maintain the urban farm site. When volunteers are present, participants managed their tasks. This interaction provides leadership experience and has been discussed as a method to enhance self-efficacy as participants demonstrate, teach volunteers, and supervise their progress. Flower arranging was integrated into the intervention as well. Participants looked at shape, color, and texture, and arranged bouquets for both personal use and for farmers' markets sales. Additionally, participants learned the intricacies of honey bottling and how to make and bottle herb vinegars. On the last day, participants were recognized with a celebratory breakfast, certificates, and opportunities to speak formally to the group. Participants received a \$15 stipend for each day they worked at the urban farm.

RESULTS

Quantitative

Overall feasibility of the study was measured by the success in recruiting patients from the clinic, conducting the baseline assessment at the clinic and having participants present for work at the urban farm regularly. A total of 11 participants were recruited and enrolled. We had 6 participants consistently attend, and 1 participant attended more than half of the

intervention days. Among the 4 participants who enrolled in the study but did not complete it; 1 participant showed up the first day and stated that she did not like group activities, and the other 3 did not present at the intervention site. In assessing the feasibility, we found that recruiting participants that expressed interest in the group-level, urban farming intervention interest rather than overall interest in participating in research would be more beneficial for future studies.

Of the 6 that had perfect attendance, 4 experienced poor HIV management (as measured by unsuppressed viral loads and low CD4 cell counts) at baseline, although we did not measure change in the pilot study. Baseline data indicated that the mean depression severity score was 12.7 (SD=5.2) and 11.3 (SD=6.6) at follow-up; and the anxiety severity was 11.2 (SD=3.2) and 7.7 (SD=4.4) at follow-up. While the differences were not significant among baseline and follow-up (8 weeks) measures, these findings suggest a positive trend for both depression and anxiety severity. Furthermore, the general health question from the short form-12 resulted in improved self-rated health from baseline to post-assessment (2.5 vs. 3.3; $p = .14$); although not a significant difference. There was a trend in the reduced mean number of days using crack or cocaine (1.67 vs. 1.0 ; $p = .36$) as well as those using heroin or opiates (1.67 vs. 1.0; $p = .36$). Also, there was an increased number of servings of fruits (1.5 vs. 2.3; $p = .30$) and vegetables (1.5 vs. 1.9; $p = .64$).

Qualitative

Respondents described several reasons why participating in the urban farming intervention contributed to an improvement in mood. Many participants discussed the great relief of having a place to go in the morning. When asked what he would do differently because of the project, one participant (male, African American) said, “to get out of the house [more often than before the intervention.]” One comment that the researchers often heard was in reference to participants’ normal feelings of isolation, and how being at the farm offered distraction from intrusive unhappy thoughts. A participant (male, African American) identified that the program, “keeps my mood good, keeps my mind focused, and keeps me motivated.” Another participant (male, African American) said that the program “keeps [me] focused on good things, [and] off bad things.” This participant also said that the program “takes a lot of anger and stress off me.” The daily and routine stressors seemed to subside as participants were occupied with weeding, digging, and harvesting tasks. When asked about the best part of this project, several participants cited the farm work itself. Feelings of self-efficacy and competence grew along with their skill sets. One participant (male, African American) said that he enjoyed, “learning something that [he could] put to use in his own home.” More than one respondent indicated a strong intent to plant a garden at their home or in their neighborhood.

Working with people and learning teamwork was also identified as a strong asset to participants. One respondent (female, African American) said that meeting new people was one of her favorite parts of the program. Most participants said that teamwork was a skill that they developed or strengthened during the intervention. Teamwork was further identified as having value because it enabled participants to learn skills that are more effective in teams, such as laying row covers, and harvesting potatoes.

Participants were happy to have an opportunity to expand their knowledge on plant life and farming. When asked what the best part of the project was, a participant (female, African American) enthusiastically stated, “learning things about farming.” There were also lessons on the current state of farming practices around the world, both on large and small scales. Participants reported enjoying developing an understanding of how the urban farm food system fit into the global food system. During this process participants learned terms such as

“food desert” which refers to the lack of access to fresh food in low-income areas. Some of the participants reflected that they lived in food deserts.

Participants acquired numerous hands-on skills that are applicable to home gardening, community farming, or paid landscaping work. Because the pilot study was held at the growing season’s end, the 8-week period was filled with wide-ranging activities. Participants learned how to identify ripe fruits and vegetables, harvest, weed, build nutrient-rich plant beds, how and why to plant a winter cover crop, how to wash and prepare a diverse harvest for sale at the market, how to build row covers for cool weather, how to use and care for tools, and which plants thrive in various conditions. Harvest time was of special interest, as participants learned how to remove food from a plant while encouraging further growth and productivity. One participant (male, African American) said that he “particularly enjoyed picking greens,” which required a special technique in order to encourage sustainable growth.

On a related note, one participant (female, African American) said that she liked “carrying the food home.” Several days participants were able to bring their own harvest home with them, including sweet potatoes, radishes, carrots, greens, tomatoes, and squash. Participants often discussed and exchanged recipes with one another. This practice brought to mind memories of eating healthy foods as children for many participants. One male respondent reported “being more conscious of the food available in the grocery stores and corner marts,” and endorsed personal interest in seeking junk food alternatives, like the food grown on the farm.

Almost all of the participants reported intent to give back to their community with their newly acquired skills. One participant (female, African American) said, “I want to teach and help others.” Another respondent (male, African American) said, “I want to become a leader in my neighborhood, and plant my own garden.” Others cited an increased desire to give back to the community utilizing their new skills through volunteerism. Another respondent (male, African American) said that he would like to do a project such as this again.

DISCUSSION

These findings illustrate that an urban farming intervention is a feasible intervention to recruit from an HIV clinic and clearly suggest that a larger study will offer substantial evidence to more widely test the impact of this intervention as an opportunity to alleviate distress and improve health outcomes. This study found that a strong collaborative relationship between a clinic and community-based organization can deliver meaningful interventions. The initial efficacy results, while not statistically significant, support further research as all measures of interest positively trended. Collaborative efforts that find methods to provide opportunities for unemployed individuals with chronic diseases will positively affect health management.

This study aimed to alleviate depressive symptoms among individuals with HIV who were unemployed. While not statistically significant, there was a reduction in expressed depressive symptoms and the qualitative results supported these positive trends. Clearly, psychiatric disorders are highly prevalent in HIV-infected populations.³ We hypothesized that individuals experience depressive symptoms and isolation, challenges that are poorly addressed in a busy outpatient medical clinic can be more effectively addressed in an integrated program such as urban farming. Qualitatively, we identified a common theme from unemployed individuals with HIV who were presenting for medical care: the expression of little purpose in their daily routine as well as a sense of isolation. Previous research has identified that severe depressive symptoms are associated with poor HIV-

related health outcomes.¹¹ Therefore, developing a non-traditional approach that aimed to reduce depressive symptoms provided a unique opportunity to intervene and improve long-term health outcomes in this population. The gardening experience gave participants somewhere to be twice weekly for 4 hours, a group with which to work and form community and skill development. We hypothesize that it is these factors that influenced the improvement in overall distress levels.

While this was not designed or intended to be an employment intervention, or even a job skills program, this study provides insight into the need for future research to evaluate how employment affects mental health, and potentially physical health among populations with HIV. The transformation of HIV from a uniformly fatal disease to a manageable chronic illness creates a new set of challenges to improve quality of life for our patients. There is an urgent need to assess the employability of individuals who not only need a source of income, but also as a social and community-forming opportunity.

While this study was designed for a sample of individuals with HIV, this type of intervention has the potential to improve health outcomes among unemployed populations who experience other chronic diseases. Urban farming and community gardening can improve access to healthy foods, reduce social isolation, and provide opportunities for moderate physical activity. Future studies should examine how individuals with other chronic diseases may benefit from urban farming as well as differences in experiences by chronic disease populations.

CONCLUSIONS

Urban farming has the potential to teach interested individuals how to better address their food security and access to fruits and vegetables. Future development of this intervention will include factors of food security, and how urban farming can train individuals to develop their own garden or community garden. With the increased focus on overcoming food deserts, this type of intervention has the potential to improve these barriers in many urban areas. While we know that an urban farming intervention addresses many different factors, we focused on psychological distress symptoms and overall health outcomes in this pilot study. Physical activity has also been shown to improve distress symptoms,¹² and thus gardening may have been the component that enhanced the outcomes. Future studies will include accurate measures of physical activity to understand the how physical exertion may influence these distress symptoms. This intervention illustrates that depressed, unemployed individuals with HIV who experience distress symptoms have the potential to re-engage in a community-based activity that is meaningful and social.

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