

Participation in Community Gardening: Sowing the Seeds of Well-Being

Participation au jardinage communautaire : pour semer les graines
du bien-être

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Mots clés : Appartenance; hortithérapie; recherche qualitative; recherche participative communautaire; santé mentale.

Abstract

Background. Sustaining well-being challenges people with serious mental health issues. Community gardening is an occupation used to promote clients' well-being, yet there is limited evidence to support this intervention. **Purpose.** This paper examines how facilitated community gardening programs changed the subjective well-being and social connectedness of people living with mental health issues. **Method.** A community-based participatory research approach and qualitative methods were used with 23 adults living in supported housing and participating in supported community gardening programs. A constructivist approach guided inductive data analysis. **Findings.** Participation in community gardening programs enhanced well-being through welcoming places, a sense of belonging, and developing positive feelings through doing. The connection to living things and responsibility for plants grounded participants in the present and offered a unique venue for learning about gardening and themselves. **Implications.** Practitioners and service-users should collaborate to develop leadership, programs, places, and processes within community gardens to enhance well-being.

Résumé

Contexte. Les personnes qui présentent de sérieux problèmes de santé mentale ont des difficultés à maintenir leur bien-être. Le jardinage communautaire est une activité qui est utilisée pour favoriser le bien-être des clients. Il existe cependant peu de preuves de l'efficacité de cette intervention. **Objectif.** Cet article examine dans quelle mesure les programmes de jardinage communautaire subventionnés peuvent influencer le bien-être subjectif et les liens sociaux des personnes ayant des problèmes de santé mentale. **Méthodologie.** L'approche de la recherche participative communautaire et des méthodes qualitatives ont été utilisées auprès de 23 adultes résidant dans des logements subventionnés et participant à des programmes de jardinage communautaire subventionnés. Une approche constructiviste a guidé l'analyse des données par raisonnement inductif. **Résultats.** Les programmes de jardinage communautaire ont eu une influence positive sur le bien-être des participants, du fait que ce sont des lieux accueillants, qui favorisent un sentiment d'appartenance et d'autres sentiments positifs par le jardinage. Leur lien à des choses vivantes et leur responsabilité envers les plantes ont ancré les participants dans le présent et leur a offert une occasion unique de faire la découverte du jardinage et d'eux-mêmes. **Implications.** Les praticiens et les usagers de leurs services devraient collaborer en vue de développer le leadership, les programmes, les sites et les processus en matière de jardins communautaires afin d'accroître le bien-être des usagers.

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The best crop of a garden, year after year, is hope.

—Robert Rodale (1987)

People experiencing mental health issues and associated inequities may have difficulty achieving their well-being goals. Socio-economic circumstances can challenge their attempts to sustain group connections and participate meaningfully in the community, which can affect social inclusion and well-being (Smyth et al., 2011). Interactions with the natural environment, especially gardening, have long been associated with well-being (Heliker et al., 2001; Wilson, 2004). Research on community garden participation has shown that it facilitates community and individual well-being (Wakefield et al., 2007), offering restorative benefits that enhance health and well-being for people with mental health issues (Clatworthy et al., 2013). Community gardening refers to social and physical activities that individuals do to maintain and manage the development of plants in a publicly accessible green space (Okvat & Zautra, 2011). Community gardening is a popular and inexpensive occupation that occupational therapists can use to facilitate clients' well-being. Presently, there is limited evidence to support this intervention for people living with mental health issues. The purpose of this paper is to present community-based participatory research (CBPR) that demonstrated the impact of facilitated community gardening programming on the subjective well-being and social connectedness of people living with mental health issues.

Background

Community gardening offers a unique avenue to well-being through engagement in activities and responsibilities that encourage social connections, skills acquisition, and personal growth. The importance of well-being has been identified in occupational therapy and occupational science, but its conceptualization has been problematic (Aldrich, 2011; Doble & Caron Santha, 2008; Stewart et al., 2016). Hammell and Iwama (2012) situated well-being as an occupational right, and they proposed a definition that included “contentment with one’s health, a feeling of belonging to some thing or group, opportunities for participation in meaningful occupations, and hope” (p. 387). Their definition aligns with evidence-based frameworks wherein recovery is conceptualized as a journey encompassing: connectedness, hope and optimism about the future, identity, meaning in life, and empowerment (CHIME; Leamy et al., 2011).

Supported housing has long been central to recovery; however, researchers have identified that housing itself does not eliminate experiences of loneliness, social isolation, and limited participation (Watson et al., 2017). Security of tenancy affords opportunities to engage in activities and social interactions that enhance well-being, but a knowledge gap exists regarding how greater engagement and sense of belonging can be facilitated.

The Do-Live-Well framework situates occupational therapy research within “dimensions of experience” that are common in community gardening and the well-being literature

(Moll et al., 2015, p. 13). In a review of allotment gardening’s impact on well-being for mixed populations, the theme “contact with nature” exemplified the *activating your body, mind, and senses* dimension (Genter et al., 2015). This review identified a strong link between allotment gardening and increased well-being. Likewise, the *dimension of connecting with others* was reflected in the themes “social network” (Genter et al., 2015) and “creating community” (Whatley et al., 2015, p. 5). In the latter study, researchers described how community garden practices facilitated inclusion and enhanced well-being; however, only 5 of the 13 participants interviewed lived with mental health issues; the others were staff, support workers, and volunteers.

Findings from community gardening studies illustrate two further experiential dimensions of the Do-Live-Well framework. First, *taking care of yourself* appears in themes of “a stress-relieving refuge” and “a healthier lifestyle” (Genter et al., 2015). Researchers examined how participation in a six-person mental health horticultural therapy program affected well-being and identified the promotion of “psychological and functional coping as a mechanism for well-being” (Joyce & Warren, 2016, p. 209). Research exploring the meaning of social networks, sustained through allotment gardening, identified the restorative environment and positive emotional responses for nine participants living with mental health issues (Fieldhouse, 2003). Second, the *developing capabilities and potential* dimension encompassed the theme of “personal development” (Genter et al., 2015, p. 602), greater well-being through skill development (Joyce & Warren, 2016), and “creating a learning environment” (Whatley et al., 2015, p. 6). The Do-Live-Well framework has illustrated experiential features of well-being research through engagement in community gardening as an occupation (Moll et al., 2015). The following interventional studies demonstrate how community gardening supported or enabled occupation and contributed to well-being.

A systematic review revealed the impact of horticultural therapy on occupational performance areas for people living with mental health issues (Cipriani et al., 2017). Statistical analysis showed strong support for horticultural therapy to improve client factors and performance skills (e.g., psychological/mental well-being and cognitive functioning). A program evaluation of a therapeutic community gardening program for 20 people with mental health issues assessed the impact of participation on well-being (Smidl et al., 2017). Researchers there used enablement skills such as adapting, coaching, and engaging and collaborating (Townsend et al., 2007).

Shortcomings from the evidence support the need to investigate community gardening further in order to make informed practice decisions to enhance well-being. Research limitations included different research questions, short projects, small samples, and studies of specific health services. These features, the nascent state of knowledge, and a lack of Canadian research justify the present study. Moreover the studies cited earlier have been initiated by occupational therapists who, by virtue of their position and agency, have the power to access resources and develop programs that address clients’ goals. There are,

however, inherent limitations with the ethnographic, case study, and program evaluation approaches noted in the literature that create a compelling case for choosing CBPR as the methodology for this study. In contrast to the aforementioned approaches, CBPR uses a health equity framework that works towards sustainability of initiatives through capacity building of its participants (Wallerstein & Duran, 2010). Although imperfectly realized, there is ongoing attention to revealing and addressing power imbalances between academic researchers and community participants. Further, CBPR's strengths-based approach and attempts to work on community-identified issues aligns well with occupational therapy values. Community gardening has great potential to address the social isolation and reduced participation that people living in supported housing face; it aligns with recovery principles. Moreover, a city-wide plan proposed ways to grow healthy communities by creating opportunities for active living, developing strong social relationships, and fostering belonging close to home (City of Vancouver, 2015). Another metropolitan area study identified isolation and community disengagement as key findings and noted that having a physical or mental condition was a major barrier to community engagement (Vancouver Foundation, 2012). Insights from these reports and the gap in knowledge informed our research questions: (a) How does participation in a community garden affect the well-being and social connections of people living in supported housing? and (b) How do we engage people, living in supported housing, in a physical activity that encourages better health and social connections?

Method

This 3-year qualitative study used CBPR principles that are presented here and followed by examples from the study:

- 1) CBPR recognizes community as a unity of identity; 2) builds on strengths and resources within the community; 3) facilitates collaborative partnerships in all research phases and involves an empowering and power-sharing process that attends to social inequalities; 4) promotes co-learning and capacity building among all partners; 5) integrates and achieves a balance between research and action for the mutual benefit of all partners. (Israel et al., 2008, pp. 49–51)

Researchers partnered with a non-profit organization to identify a community of people living with mental health issues who used the organization's resource center and supported housing services (#1). CBPR principles guided our project advisory group (PAG), which comprised four to six participants and four staff: the principal investigator (PI), partner organization CEO, horticultural therapist, and community mental health worker (#3). The group met bi-monthly to make project decisions such as recruitment strategies and major purchases, and monitored how the project was benefitting academic and community needs (#5). CBPR principles were apparent within meetings where participants chaired meetings, raised issues, and offered advice, and the structure provided

opportunities to share knowledge (#4). We built on pre-existing relationships between PAG participants and encouraged them to share their skills (#2). These collective efforts helped the PI lead the development of two community gardens, one with large raised beds on a vacant lot at a supported housing site and the other with containers and built-in planters in a defunct patio garden/smoking area at a resource center. CBPR principles correspond well to the fundamentals of occupational enablement: "choice, risk, responsibility; client participation; change; justice; visions of possibility; and power sharing" (Townsend et al., 2007, p. 100).

Participants and Program

We designed broad inclusion: 19 years or older; female, male, or transgendered; living with serious mental illness and/or addictions; interested in doing community gardening; living at a mental health supported housing site and/or attending the gardening program at a mental health resource center; able to read and speak English; and willing to share thoughts and/or feelings through interviews and/or focus groups. Recruitment documents comprised a flyer, a letter of initial contact, and an informed consent. The PI recruited residents at supported housing sites and the resource center, and community mental health workers identified potential participants. Word of mouth aided ongoing recruitment. Participants signed informed consents and we re-confirmed consent verbally before each interview. The University of British Columbia Behavioural Research Ethics Board approved this study.

The horticultural therapist (HT) prepared and facilitated one-hour structured weekly group sessions at each site and the PI assisted. These sessions combined education on edible gardening with social interaction, and peer-to-peer and facilitator-led learning. We provided each gardener with a resource binder and added handouts (e.g., gardening instructions and recipes). (Note: gardener is any service-user; participant is a service-user gardener who signed a consent.) Hands-on gardening followed group sessions where volunteers and staff worked alongside participants and supported their efforts. Consistent with enablement fundamentals, participants chose their plants/seeds (e.g., vegetables and herbs) and decided when to garden. Eight master of occupational therapy (MOT) students participated, with a pair attending sessions three to four times annually. Enacting the capacity building principle (#4), a peer support worker for each garden joined the team halfway through the project. On-site staff used their relationships with gardeners to encourage ongoing involvement.

Data Collection

The PI and MOT students (i.e., students or researchers) collected data through individual semi-structured interviews, participant observations, focus groups, two mapping activities, and the WHO Quality of Life Scale-BREF (WHOQOL-BREF); the latter is valid for this population (Skevington & McCrate, 2012). See Table 1 for sample interview questions. The mapping and focus group methods were chosen partly to elicit

Table 1
Sample Interview Questions.

Primary Question	Prompts
Tell me about your past experiences, if any, of gardening. This could be when you were a child, indoor container gardening, any experiences you've had.	How did you learn about gardening?
I'm interested in what you do in the garden. Can you describe a gardening session?	What happens first when you go out to the garden? What have you planted? How is it doing?
What are some of the feelings that you've had when gardening?	Sometimes there's a range of feelings people have who garden; what have you noticed?
I'd like to know how you define well-being and recovery. What does well-being look like for you?	How do you gauge your well-being on a day-to-day basis?
I'd like to learn more about the social aspect of the gardening. Would you tell me who's around when you're gardening and the kinds of conversations that you have?	What's it like to do your gardening when you're alone? How does it feel when other people are sharing the garden space with you? What's your preference?
What would you like to pass on to other people who might be thinking about joining the garden?	
How do you think the community could use gardening programs to improve people's well-being?	

participant-driven contributions. MOT students wrote interview field notes and conducted 18 hours of participant observation, recording vivid descriptions of gardening activities, interactions, and the milieu. Participant interviews lasted 35 to 90 minutes. Using digital voice recorders, the students interviewed 17 participants once and 6 participants twice. The PI attended 158 of the 188 gardening sessions that occurred (2014: 34 hours; 2015: 86 hours; and 2016: 68 hours). The PI invited participants to a focus group at each site ($n=8$; $n=5$), and facilitated a discussion about the community gardening program and ways to improve personal and community well-being. Interviews, focus groups, and conversations with researchers while gardening (captured in field notes) were designed to create safe conditions for participants to describe their experiences and propose changes to the project. It is difficult to assess how participants perceived their collaboration with researchers, but many proposed changes that arose from these data were enacted. These included posing shorter interview questions, changing the group time to encourage greater participation, and making signs to raise awareness of the gardens and prevent plant destruction.

Participants were asked to complete a personal network map and a community participation map during their interviews. The personal network map had three concentric circles, where the participant placed the names of people in their network according to how close they felt to them (Pilisuk & Parks, 1986). For the community participation map, each participant traced their journeys on a city map, writing what they did at each location. The WHOQOL-BREF (World Health Organization, 2004) is a 26-item questionnaire with a Likert scale that participants used to rate their quality-of-life. These data collection methods were designed to occur during and at the study's completion; however, researchers' time constraints and participants' choices to decline impeded this plan.

Data Analysis

We used a constructivist approach that acknowledges multiple constructed realities and the modest truth claims that partial, situated results offer (Braun & Clarke, 2006). Data from individual interviews, field notes, and focus groups were transcribed verbatim; the PI used a transcription service and the MOT students transcribed their data. Students used participant observation and field notes to enhance their understanding of the interview data. One example occurred when a participant spoke of helping other gardeners with tasks and the student had already described this interaction in her field notes. All data were analyzed inductively; the students used word processing programs while the PI and research assistant (RA) used qualitative software (NVivo, 2012). All researchers used thematic analysis, and the students' process is detailed here reflecting a phased yet iterative process (Braun & Clarke, 2006). After reading all data (phase 1) students selected relevant text and developed low-level codes, for example, gardening provides a sense of accomplishment and community in an adjacent column (phase 2). During phase 2, students coded at least one interview separately, achieved consensus through discussion, and developed coding frameworks. Students then distilled all coded data into more abstract categories. For example, sharing space and resources, and helping each other contributed to the category of "collaboration," which then became a potential theme named "Community Gardening Promotes a Safe Environment." Lastly, students developed themes from the categories that the PI then reviewed (phases 3–5). For instance, a student pair developed a final theme called "Creating a Sense of Belonging" from the four categories: commitment, role development, sense of community, and sharing with others. The analytic phases included integrating insights from field notes, research journals, and mapping and quality-of-life data. The latter two data sets were incomplete but were used, for example, in second interviews to prompt discussion about

Table 2
Demographic Characteristics of Participants.

Characteristic	Resource Center Site N = 12		Supported Housing Site N = 11		Full Sample N = 23	
	n	%	n	%	n	%
Gender						
Female	2	16.7	6	54.5	8	34.8
Male	10	83.3	5	45.5	15	65.2
Marital status						
Single	8	66.7	8	72.7	16	69.6
Married/partnered	0	0	2	18.2	2	8.7
Divorced/separated	4	33.3	1	9.1	5	21.7
Living situation						
Independent apartment	2	16.7	2 ^a	18.2	4	17.4
Supported housing	3	25.0	9	81.8	12	52.1
With family	2	16.7	0	0	2	8.7
Unknown	5	41.7	0	0	5	21.7
Employment status						
Unemployed	10	83.3	7	63.6	17	73.9
Part-time/occasional ^b	1	8.3	4	36.4	5	21.7
Unknown	1	8.3	0	0	1	4.3
	M (SD)	Range	M (SD)	Range	M (SD)	Range
Age	55.88 (9.93)	43-67	50.9 (12.49)	32-64	53.11 (11.39)	32-67
Mental health conditions ^c	ADHD, anxiety disorder, bipolar disorder, depression, schizoaffective disorder, schizophrenia, substance misuse					

^aThese two apartment-dwelling participants lived near the supported housing site and gardened at that location. ^bPart-time employment ranged from 1-20 hours weekly and was irregular and/or seasonal. ^cMental health conditions were self-reported and many participants chose not to disclose their mental health conditions.

participants' social networks and community activities. The PI and RA re-examined students' analyses for similarities and differences, incorporating that work into the final themes reported herein. Lastly, the meeting structure and narrative reporting of PAG minutes that encouraged members to discuss their community gardening experiences complemented interview and observation data, thus strengthening the analysis.

Trustworthiness

The strategies chosen to address trustworthiness are well-aligned with thematic analysis (Nowell et al., 2017). Triangulation refers to gathering multiple viewpoints, and it was practiced via several data collection methods and diverse researcher perspectives (e.g., student vs. academic), which influenced coding through to developing the themes. This practice offset the likelihood of researcher biases and assumptions shaping the meaning of participants' experiences. The PI trained the students in interview and analysis techniques (e.g., aiming for in-depth descriptions), provided feedback on their analyses, and encouraged reflexivity to assess their impact on the research process. Member checking was a trustworthiness strategy used; participants provided input on provisional themes that enhanced the credibility of the findings. Specifically, several participants confirmed that the themes resonated with them; two participants emphasized the difference between the space that previously had "rough elements" and felt unsafe,

and the "positive vibe" of the current garden. Lastly, the PI re-examined her assumptions, role performance tensions, and "positionality as a methodological dilemma" (Day, 2012, p. 73). The PI's professional orientation to well-being and occupations shaped the research questions. Data showing positive changes in participants' affect and interactions were attributed to the environment; recognizing this, the PI pursued alternative explanations. Role performance was intertwined with positionality as the PI sought to maintain authenticity in her function as the researcher, who was responsible for the project, and as the researcher-gardener who worked alongside participants and desired acceptance. The PI chose to participate in gardening to bridge the insider-outsider phenomenon that can influence participants' collaboration with researchers. The absence of lived experience with mental health issues and low income positioned the PI as an outsider. The trustworthiness strategies used illustrate how subjectivity was addressed and the credibility of the themes.

Findings

We recruited 23 study participants for a minimum of one season; 10 participants gardened all three years. More than 40 other people gardened but chose not to sign a consent form. See Table 2 for participants' demographic characteristics. To avoid identifying study participants and site locations, we have

described the sample broadly and used pseudonyms. The quotes are from program participants. Our analysis identified commonalities among participants' data that established four themes: *Offering Structured Programs and Welcoming Places*; *Cultivating Positive Feelings through Doing*; *Creating a Sense of Belonging*; and *Being Connected to Something Living and Learning About Gardening*.

Offering Structured Programs and Welcoming Places

This theme describes the importance of creating safe settings where individuals who wanted to garden were welcomed, and where they chose what to grow and how to be involved. Participants' choice of seeds, plants, and session topics was a feature of the structured program. As Pierre said, "You can have your own creation as far as what you grow, and your choices of what you want to grow and what you want to eat and you can experiment with certain things, right?" Shelagh (horticultural therapist) provided leadership and structure that contributed to a cheerful atmosphere. She and other volunteers provided healthful snacks, and gardeners made tea. Shelagh began each session by inviting gardeners to introduce themselves and share a recent nature experience; then she presented a gardening lesson, with opportunities for people to ask questions and share knowledge and stories. At the end of the session, Shelagh invited gardeners to share what they learned or enjoyed. Gardeners discussed their activities, learning, and interactions. During his interview, Paul expanded on how one aspect of the program influenced him:

You can ask all kinds of stuff and they were quite nice about it. They were really nice and encouraging to me. And I enjoyed it And you know they gave us the um, binder and every week they give us different pages for the binder. There's lots of good information in there about the different kinds of plants. And I liked that.

Paul's comment highlighted how the facilitators encouraged and assisted gardeners, most of whom had little confidence and limited experience growing plants. Harold's comments provided an insight about how the characteristics of gardening affected him:

The angst that generally exists within this building tends to dissipate when you're out mucking around in the soil. The nature of working with dirt is, you know, you can tolerate your mistakes, you're working with dirt, you know, and most, you'll find most people with mental illness have a hard time making mistakes or, you know, terrified of making mistakes.

The process and outcome of claiming space and building the gardens completes this theme. The physical transformation of two disparate spaces into specific places occurred as participants took on new tasks as part of their gardener role (e.g., welcoming newcomers). Gardeners expressed feelings of ownership, and developed rules and strategies to solve problems. For example, gardeners and researchers posted signs in response to smokers butting out cigarettes in planters and

neighbors picking gardeners' produce without permission. Notwithstanding this, Glenda noted, "lots of people are talking about the garden as a place of refuge."

Cultivating Positive Feelings Through Doing

This finding highlights the benefits that individuals attributed to their participation in the community gardening program; in short, they recognized the positive outcome of "doing." The perceived benefits included participants feeling more confident about their abilities, trusting their capacity to learn, and feeling better about themselves. Carmalea stated:

There were times that I'm really depressed you know and every time I go to the garden, because I see my plants growing, that makes me feel good. Because that reminds me that I did something good at least. You know, at least, this one I didn't screw up.

The participants reported mainly positive feelings specifically joy, happiness, and pride. The data identified doing as a means of eliciting pleasant feelings. Tanya explained:

I feel really happy when I garden. I love gardening. It makes you feel like you're accomplishing something. It makes you feel happy because when you see your plant growing and doing well [you recognize] that you helped make all that happen.

Relaxation and stress reduction were frequent outcomes of doing community gardening in the context of this program and its welcoming milieu. Participants also identified irritations associated with gardening, yet remained optimistic. As Carl stated: "There's all kinds of negative feelings that go with any project . . . you know, nothing big; the beneficial feelings outweigh the negative. The negatives are small little things, like swatting at a bug." Recognizing the frustrations that Carl raised, Brian highlighted the relaxing features of gardening.

It's pretty low-key. It's pretty calm, like you just go there and you get your own plot. You can't really screw it up. I mean you're just planting seeds in mud . . . I just think gardening is calming. I don't know, a lot of people don't spend much time outside and it's just healthy to get outside. To get some fresh air. Get some sun.

Community gardening offered possibilities for current and future engagement with other people, as Ernie explained.

You meet people, you have similar interests, and things are kind of interconnected in a community, right? You can of course connect with people, everyone has pretty much a wide range of interests; you might find other things that you're interested in. That's part of the networking, socializing thing.

Some people gardened as a means to socialize; thus the occupation was less important than the opportunity to interact with people. Yet for others who experienced anxiety, their efforts were more on the garden activities and less on social interactions. Hannah said, "Yeah, we just sort of make chit-chat. Some people just talk about whatever is going on in their life. Yeah. Mostly I just kind of stay focused on plants." Thus,

positive feelings appear linked to having choices, to use the occupation as an end or a means.

Creating a Sense of Belonging

The experience of belonging that participants perceived arose through inclusion and affirmation from others, mutual support, social interaction, and connection to others through interpersonal relationships. Role development occurred formally around assigned gardening session tasks and chosen activities (e.g., making tea, getting supplies out, and mixing soil). Roles evolved informally and participants spoke proudly of them. Joel said: "I have another role in the garden. I'm the unofficial photographer." Fulfilling roles contributed to an atmosphere of belonging, which further strengthened an individual's sense of purpose and place within the group through validation from others. Fred observed:

People like to call me the caretaker. I'm the guy that goes out and waters and that's why we had such a good garden. Watered every day, right . . . and it feels like people are counting on me too. I don't get that very often because I don't make commitments. I don't really pay that much attention to people here because I'm a recluse.

Stacie noted that participation in the garden project fostered a sense of belonging and being needed: "It was nice to know people were expecting me to be there on time. So, I had something to do at least once a week, to um, prepare for class, and to be reliable." Some participants' circumstances prevented them from regular attendance, but they stated their intention to resume gardening. Such expressions of commitment reinforced participants' experiences of feeling included in something larger than themselves (i.e., the community garden) and emphasized their belonging to it. Mutual support occurred when people watered for others and harvested their produce. Matthew explained:

Well, yeah, because it works both ways for people. Um, if you help, if you learn how to help people and how they can help you, cause it's a two-way street. And it's good because you know each other and at the end of the day, you feel good.

The community garden provided opportunities for participants to share produce with others and to engage in social interactions where the occupation was the explicit focus rather than the socializing. Thus, participants created relationships through their actions in a place where they were comfortable and felt they belonged. Brian summed up this phenomenon:

I can garden and talk to people whereas there's not a lot of things that I can do where I'm doing both. If we're gardening in one plot and there's two or three of us then, you know, I can do the gardening and be talking to them as well and it just seems to flow really well.

Being Connected to Something Living and Learning About Gardening

Participants recognized a connection to living things as they observed the natural world through the occupation of gardening.

The weather, insects, and seasons contributed to participants' awareness of a sustained person-plant connection. Participants' descriptions ranged from Daisy's observation that "Plants were coming up every day. I'd see a little bit of, a lot of growth, and the plants' vitality" to William's reflection, "Just watch something grow from seed to flowering. It's the most beautiful experience you've ever seen." Participants' gardening efforts provided opportunities to take responsibility for plants that could die without their attention. Further, gardeners typically shared some of their bounty with co-gardeners, staff, and volunteers, and appeared pleased to do this. Doug described what his efforts meant to him:

Raising it was like my child, raising something to a point where it was growing, healthy. You could pick from it, you could eat from it, give your friends the food, like the onions, and they're happy with it . . . Be[ing] responsible for something growing. It's the weirdest feeling. It's like, ooh this is my garden. Look that's growing 'cause I watered and planted it.

Connecting with plants' immediate demands encouraged participants to be present with the activity. Paul described this experience as being intentional and developing an awareness of living things. He explained that "your mind is always being brought back to the plants, because that's what it's all about." Harold offered a similar perspective about the importance of being present.

Anything that's physically engaging and gets people into the now, and that's a big thing for most people that are not feeling well and in bad places is, you stop thinking about a future and the past and you just think, this is the thing in front of me and this is the thing I have to do.

The experience of learning about gardening appeared inseparable from participants appreciating a connection to something living. The depth of learning extended to applying knowledge gained through gardening to life outside the garden. Mark explained:

Gardening is so comprehensive, you know? And well-being takes a lot of work, you know, with mental illness and that. So, you have to realize that what you're doing in the garden is gonna be . . . the more you put in and the more effort and challenge some of the disturbing thoughts . . . Yeah it's the same with the plants, you have to do all these things and with your personal life, you have to do all these things too. And it works because I've seen myself succeed more these past couple of years.

Discussion

This research sought to understand how participation in community gardening impacted well-being and social connections for people living with mental health issues. The theme *Offering Structured Programs and Welcoming Places* emphasized how environments that provided safety, support, and choices enhanced participants' well-being—a finding consistent with earlier research. Fieldhouse (2003) identified the social milieu

of a garden as being “accepting, safe and supportive” (p. 289). Other qualitative studies of occupations have shown that participation within safe places augments well-being. For instance, well-being was a central theme from a review of research about Men’s Sheds, a health policy initiative that organized community-based places for men to participate in occupations such as carpentry (Wilson & Cordier, 2013). Their finding relates to our first theme because men’s sheds have created welcoming places with familiar occupations, with the express purpose of facilitating well-being and reducing social isolation. Health researchers have focused increasingly on the role of place in creating therapeutic landscapes within community gardens (Pitt, 2014). In her study of community gardens, Pitt found that the experience of flow, believed to be health-enhancing, was less likely to occur in gardens where disorganization and leadership tensions left participants feeling unwelcome and unsupported. In contrast, using the CHIME recovery framework, we can view the positive relationships between staff and participants in our first theme as interactions that inspire hope (Leamy et al., 2011).

The theme *Cultivating Positive Feelings Through Doing* offers robust evidence for community gardening’s contribution to well-being, adding to findings from other studies. A critical review identified evidence of increased self-esteem and emotional well-being from gardening; however, researchers criticized the lack of robust randomized controlled trials (RCTs) and long-term outcomes (Clatworthy et al., 2013). Significant gains in affect, well-being, and engagement were found in a systematic review of RCT or cohort horticultural therapy studies (Cipriani et al., 2017, p. 65). These gains reinforce our finding that doing, within a supported community gardening program, cultivated feelings of increased confidence, happiness, and relaxation. Happiness was also a theme from a study of how gardening fosters emotional and physical well-being (Smidl et al., 2017). Further, a systematic review identified well-being, and doing activities, as quality-of-life domains for people living with mental health issues (Connell et al., 2012). In developing their evidence-based quality-of-life model, Connell et al. found that enacting activities enhanced well-being if participants had choice and control over them (another domain that contributed to meaningful doing). Utilizing the Do-Live-Well framework, the theme reported here has illustrated the “taking care of yourself” and “experiencing pleasure and joy” dimensions of experience, which have been linked to well-being (Moll et al., 2015, p. 13). This framework offers a client-centered approach that aligns well with recovery-based occupational therapy.

The theme *Creating a Sense of Belonging* is supported by evidence that participation in therapeutic horticulture initiatives and group gardening programs for people living with mental health issues is helpful (Diamant & Waterhouse, 2010; Whatley et al., 2015). The limited evidence prompted an examination of belonging findings from similar populations and in quality-of-life literature. Research on homeless women participating in a gardening group identified the theme “social inclusion” and discussed how being included in the “garden

club” facilitated a sense of belonging, having a positive effect on participants’ relationships (Grabbe et al., 2013). Thematic findings from research among homeless Australians included “connecting with others,” which was proposed as a mechanism for achieving a sense of belonging through doing activities and sharing resources, especially for Indigenous participants (Thomas et al., 2012). Hammell’s (2014) explication of well-being and belonging, specifically “belonging as connectedness” (p. 42) resonates with our theme. “Belonging as the experience of a safe haven” (p. 44), from Rebeiro’s (2001) research, described environments offering acceptance and comfort that could facilitate reciprocal, supportive relationships. “Belonging as doing *with* others” (p. 43) examined the potential of “being in relation to” people through occupation, as shared occupations provide people opportunities to build supportive networks and develop social skills. “Connectedness to others” (p. 42) proposed that the desire to belong may influence occupational participation and well-being. Our belonging finding encompasses features such as connectedness, meaning through role development, and empowerment by taking personal responsibility, all thought to facilitate recovery (Leamy et al., 2011). Situating our finding within a recovery framework lends support to occupational therapists designing programs to maximize sense of belonging.

The theme *Being Connected to Something Living and Learning About Gardening* builds on evidence that was identified in earlier research (Joyce & Warren, 2016; Whatley et al., 2015). Fieldhouse (2003) found that participants’ positive emotional responses to plants and the caring relationships they developed with plants enhanced their well-being. He theorized that the garden constituted a restorative environment and had beneficial effects on participants’ learning. We also draw on attention restoration theory as an evidence-based framework for understanding our finding (Kaplan & Kaplan, 2011). The aspects of natural environments that have been found to contribute to well-being include the following: “soft fascinations” that allow the mind to drift and be restored; comprehensibility of the setting wherein a person feels capable and wants to participate; diversity of stimuli that encourage exploration; and a balance between understandability and mystery (p. 309). We propose that participants’ experiences of these phenomena formed part of the therapeutic community gardening program that helped them to develop person-plant relationships and learn about gardening. This theme offers a modest empirical contribution to the “activating your body, mind, and senses” dimension proposed in the Do-Live-Well framework (Moll et al., 2015, p. 13)

Limitations

We experienced two common challenges of conducting CBPR research. Ideally a community coalesces around a problematic issue and initiates a research partnership in order to act for positive change (Minkler, 2005). In practice, the community-driven feature was difficult to enact due to inequities between

community partners regarding research skills, funding access, health issues, and other resources. In our research, the PI and the CEO of a mental health organization, rather than its service users, initiated the research. Negotiation with community members about meaningful data collection methods may have resulted in better participation with the mapping activities and WHOQOL-BREF. The second challenge was involving the community throughout the research. We had difficulty adhering to this principle because of disparate interests and motivations between partners and mental health issues. We engaged with PAG participants well, but only one participant contributed significantly to other research processes (i.e., knowledge translation).

Implications for Occupational Therapy Practice and Research

The findings support occupational therapy's move towards well-being as a framework to guide practice and away from categories of leisure, self-care, and productivity, which have been contested (Hammell, 2014). Occupational therapists working within recovery-oriented practices can use the findings to guide program development in mental health centers, clubhouses, and supported housing settings. Practitioners should collaborate with service users to elicit ideas about how to create community gardens that are welcoming places, where belonging opportunities are intentional and plentiful, and doing in nature encourages mastery and inspires hope. Resources to achieve this include existing community gardens and gardening clubs whose members may share knowledge, gardening stores, grants from credit unions and non-profit organizations, and service organizations.

Future well-being research is essential to extend the knowledge gained from the present study and use it to enhance clients' occupational participation. Occupational therapy needs robust evidence that explicates how place and participation intersect, which could be a corrective to the over-emphasis on analysis at the individual level (see, Gerlach et al., 2017). Studying belonging presents fertile ground for generating knowledge about occupations, discovering their influence on clients' well-being, and exploring occupational engagement as a collective experience. Knowledge about the characteristics of community gardening is limited but is needed to understand its potential as a path to well-being. Additional mixed methods and long-term studies of community gardening programs' impact on well-being are necessary to build a strong knowledge base for practice. CBPR approaches have great potential to help create conditions of empowerment from which people with mental health issues can continue their recovery.

Conclusion

This study contributes to a growing body of knowledge about the potential of supported community gardening programs to positively impact the well-being of people with serious mental

health issues. The study illustrates that combining a facilitated program and safe places creates opportunities for people to participate on their own terms. The influence of leadership is a key factor, from the PI's role in instigating the research, building the garden infrastructure, and procuring and managing resources (including people) to the emerging leadership roles of garden program participants, via the CBPR model that included peer-to-peer and structured learning. This occupation accommodates individuals who wish to develop gardening skills and those who wish to use gardening as a place for social interaction. Participants' positive experiences of learning through caring for plants distinguishes community gardening from other occupations that are less forgiving of mistakes. Community gardening is a non-stigmatizing occupation that facilitates belonging and well-being and should be encouraged in the context of increasing environmental awareness and connection to nature, and its benefits to society.


Key Messages

- Safe places and structured, facilitated community gardening programs increase the accessibility of this occupation for people living with mental health issues.
- Unique environmental and social features of supported community gardens provide occupational therapists with knowledge to enhance clients' sense of belonging and competency.
- Practitioners and service-users should collaborate to develop leadership, programs, places, and processes within community gardens to enhance well-being.

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References

- Aldrich, R. M. (2011). A review and critique of well-being in occupational therapy and occupational science. *Scandinavian Journal of Occupational Therapy*, 18, 93–100. <https://doi.org/10.3109/11038121003615327>

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*, 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Cipriani, J., Benz, A., Holmgren, A., Kinter, D., McGarry, J., & Rufino, G. (2017). A systematic review of the effects of horticultural therapy on persons with mental health conditions. *Occupational Therapy in Mental Health, 33*, 47–69. <https://doi.org/10.1080/0164212X.2016.1231602>
- City of Vancouver (2015). A healthy city for all. <https://vancouver.ca/files/cov/Healthy-City-Strategy-Phase-2-Action-Plan-2015-2018.pdf>
- Clatworthy, J., Hinds, J. M., & Camic, P. (2013). Gardening as a mental health intervention: A review. *Mental Health Review Journal, 18*, 214–225. <https://doi.org/10.1108/MHRJ-02-2013-0007>
- Connell, J., Brazier, J., O’Cathain, A., Lloyd-Jones, M., & Paisley, S. (2012). Quality of life of people with mental health problems: A synthesis of qualitative research. *Health and Quality of Life Outcomes, 10*, 1–16. <https://doi.org/10.1186/1477-7525-10-138>
- Day, S. (2012). A reflexive lens: Exploring dilemmas of qualitative methodology through the concept of reflexivity. *Qualitative Sociology Review, 8*(1), 60–85. http://www.qualitativesociologyreview.org/ENG/archive_eng.php
- Diamant, E., & Waterhouse, A. (2010). Gardening and belonging: Reflections on how social and therapeutic horticulture may facilitate health, wellbeing and inclusion. *British Journal of Occupational Therapy, 73*, 84–88. <https://doi.org/10.4276/030802210X12658062793924> <https://doi.org/10.1007/s11205-009-9493-y>
- Doble, S. E., & Caron Santha, J. (2008). Occupational well-being: Rethinking occupational therapy outcomes. *Canadian Journal of Occupational Therapy, 75*, 184–90. <https://doi.org/10.1177/000841740807500310>
- Fieldhouse, J. (2003). The impact of an allotment group on mental health clients’ wellbeing, and social networking. *British Journal of Occupational Therapy, 166*, 286–296.
- Genter, C., Roberts, A., Richardson, J., & Sheaff, M. (2015). The contribution of allotment gardening to health and wellbeing: A systematic review of the literature. *British Journal of Occupational Therapy, 78*, 593–605. <https://doi.org/10.1177/0308022615599408>
- Gerlach, A. J., Teachman, G., Laliberte-Rudman, D., Aldrich, R. M., & Huot, S. (2017). Expanding beyond individualism: Engaging critical perspectives on occupation. *Scandinavian Journal of Occupational Therapy, 25*, 35–43. <https://doi.org/10.1080/11038128.2017.1327616>
- Grabbe, L., Ball, J., & Goldstein, A. (2013). Gardening for the mental well-being of homeless women. *Journal of Holistic Nursing, 31*, 258–266. <https://doi.org/10.1177/0898010113488244>
- Hammell, K. R. W. (2014). Belonging, occupation, and human well-being: An exploration. *Canadian Journal of Occupational Therapy, 81*, 39–50. <https://doi.org/10.1177/0008417413520489>
- Hammell, K. R. W., & Iwama, M. K. (2012). Well-being and occupational rights: An imperative for critical occupational therapy. *Scandinavian Journal of Occupational Therapy, 19*, 385–394. <https://doi.org/10.3109/11038128.2011.611821>
- Heliker, D., Chadwick, A., & O’Connell, T. (2001). The meaning of gardening and the effects of well being of a gardening project on diverse populations of elders. *Activities, Adaptations & Aging, 24*, 35–56. https://doi.org/10.1300/J016v24n03_03
- Israel, B. A., Schultz, A. J., Parker, E. A., Becker, A. B., Allen, III, A. J., & Guzman, R. (2008). Critical issues in developing and following CBPR principles. In N. Wallerstein & M. Minkler (Eds.), *Community-based Participatory Research for Health* (2nd ed., pp. 47–66). Jossey-Bass.
- Joyce, J., & Warren, A. (2016). A case study exploring the influence of a gardening therapy group on well-being. *Occupational Therapy in Mental Health, 32*, 203–215. <https://doi.org/10.1080/0164212X.2015.1111184>
- Kaplan, R., & Kaplan, S. (2011). Well-being, reasonableness, and the natural environment. *Applied Psychology: Health and Well-Being, 3*, 304–321. <https://doi.org/10.1111/j.1758-0854.2011.01055.x>
- Leamy, M., Bird, V., Le Boutillier, C., Williams, J., & Slade, M. (2011). Conceptual framework for personal recovery in mental health: Systematic review and narrative synthesis. *British Journal of Psychiatry, 199*, 445–452. <https://doi.org/10.1192/bjp.bp.110.083733>
- Minkler, M. (2005). Community-based research partnerships: Challenges and opportunities. *Journal of Urban Health: Bulletin of the New York Academy of Medicine, 82*(2) Suppl 2, ii3–ii12. <https://doi.org/10.1093/jurban/jti034>
- Moll, S. E., Gewurtz, R. E., Krupa, T. M., Law, M. C., Larivière, N., & Levasseur, M. (2015). “Do-Live-Well”: A Canadian framework for promoting occupation, health, and well-being. *Canadian Journal of Occupational Therapy, 82*, 9–23. <https://doi.org/10.1177/0008417414545981>
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). *International Journal of Qualitative Methods, 16*, 1–13. <https://doi.org/10.1191/1478088706qp063oa>
- NVivo (10) [Computer software]. (2012). QSR International. <https://www.qsrinternational.com>
- Okvat, H. A., & Zautra, A. J. (2011). Community gardening: A parsimonious path to individual, community, and environmental resilience. *American Journal of Community Psychology, 47*(3–4), 374–387. <https://doi.org/10.1007/s10464-010-9404-z>
- Pilisuk, M., & Parks, S. H. (1986). *The healing web: Social networks and human survival*. University Press of New England.
- Pitt, H. (2014). Therapeutic experiences of community gardens: Putting flow in its place. *Health & Place, 27*, 84–91. <https://doi.org/10.1016/j.healthplace.2014.02.006>
- Rebeiro, K. L. (2001). Enabling occupation: The importance of an affirming environment. *Canadian Journal of Occupational Therapy, 68*, 80–89. <https://doi.org/10.1177/000841740106800204>
- Rodale, R. (1987). Robert Rodale quotes. https://www.azquotes.com/author/25370-Robert_Rodale
- Skevington, S. M., & McCrate, F. M. (2012). Expecting a good quality of life in health: Assessing people with diverse diseases and conditions using the WHOQOL-BREF. *Health Expectations, 15*, 49–62. <https://doi.org/10.1177/000841740106800204>
- Smidl, S., Mitchell, D. M., & Creighton, C. L. (2017). Outcomes of a therapeutic gardening program in a mental health recovery center. *Occupational Therapy in Mental Health, 33*, 374–385. <https://doi.org/10.1080/0164212X.2017.1314207>
- Smyth, G., Harries, P., & Dorer, G. (2011). Exploring mental health service users’ experiences of social inclusion in their community

- occupations. *British Journal of Occupational Therapy*, 74, 323–331. <https://doi.org/10.4276/030802211X13099513661072>
- Stewart, K. E., Fischer, T. M., Hirji, R., & Davis, J. A. (2016). Toward the reconceptualization of the relationship between occupation and health and well-being. *Canadian Journal of Occupational Therapy*, 83, 249–259. <https://doi:10.1177/0008417415625425>
- Thomas, Y., Gray, M. A., & McGinty, S. (2012). An exploration of subjective wellbeing among people experiencing homelessness: A strengths-based approach. *Social Work in Health Care*, 51, 780–797. <https://doi:10.1080/00981389.2012.686475>
- Townsend, E. A., Polatajko, H. J., & Craik, J. (2007). Enablement foundations. In Townsend E. A. Polatajko H. J. (Eds.), *Enabling occupation II: Advancing an occupational therapy vision for health, well-being & justice through occupation*. CAOT.
- Vancouver Foundation (2012). Connections and engagement. <https://vancouverfoundation.ca/initiatives/connections-and-engagement>
- Wakefield, S., Yeudall, F., Taron, C., Reynolds, J., & Skinner, A. (2007). Growing urban health: Community gardening in south-east Toronto. *Health Promotion International*, 22(2), 92–101. <https://doi.org/10.1093/heapro/dam001>
- Wallerstein, N., & Duran, B. (2010). Community-based participatory research contributions to intervention research: The intersection of science and practice to improve health equity. *American Journal of Public Health*, 100, S40–46. <https://doi.org/10.2105/AJPH.2009.184036>
- Watson, J., Fossey, E., & Harvey, C. (2017). A home but how to connect with others? A qualitative meta-synthesis of experiences of people with mental illness living in supported housing. *Health and Social Care in the Community*, 27, 546–564. <https://doi.org/10.1111/hsc.12615>
- Whatley, E., Fortune, T., & Williams, A. E. (2015). Enabling occupational participation and social inclusion for people recovering from mental ill-health through community gardening. *Australian Occupational Therapy Journal*, 18, 214–225. <https://doi:10.1111/1440-1630.12240>
- Wilson, E. O. (2004). For the love of life. *Acta Horticulturae*. Proceedings XXVI IHC – The Colloquia Presentations. N. E. Looney (Ed.), 642, 71–78. <https://doi.org/10.17660/ActaHortic.2004.642.8>
- Wilson, N. J., & Cordier, R. (2013). A narrative review of Men's Sheds literature: Reducing social isolation and promoting men's health and wellbeing. *Health and Social Care in the Community*, 21, 451–463. <https://doi:10.1111/hsc.12019>
- World Health Organization (2004). Quality of Life (WHOQOL)-BREF. https://www.who.int/substance_abuse/research_tools/whoqolbref/en/

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