THE ROLE OF COMMUNITY GARDENS IN
SUPPORTING QUALITY OF LIFE IN URBAN
DWELLING OLDER ADULTS

by
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Abstract

The goals of this case study were to explore the role of community gardens in supporting quality of life in urban dwelling older adults and to gain a better understanding of the social aspects of community gardening participation. Qualitative research methods were employed, including in-depth interviews and ethnographic observations with selected garden members from Cottonwood Community Garden in East Vancouver, Canada. Five substantive themes emerged: a) Maintenance of overall well-being, b) Engaging in a meaningful pastime, c) Social engagement, d) “Staying invested in the garden as I age”, and e) Gardening in East Vancouver. These themes depict the subjective experiences of older community gardeners and highlight the physical, psychological and social benefits ensuing from their participation in community gardening. The findings have potential implications on community gardening programs for older adults and design guidelines to support the inclusion of accessible green spaces in urban environments to facilitate active aging.

Keywords: Community Gardening; Gardening; Green Spaces; Quality of Life; Social Engagement; Older Adults
For the members of Cottonwood Community Garden
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Introductory Image
1. Introduction

The percentage of the population aged 65 and over in British Columbia is steadily rising making the province one of the most rapidly aging regions in Canada (Ministry of Health Services, 2004). This trend is projected to continue and it is estimated that by the year 2031, 24% of the province’s population will be over the age of 65 doubling the number of older adults present today (Ministry of Health Services, 2004). Due to this anticipated demographic shift, it is necessary to conduct research to focus on the needs of an aging population and emphasize pathways in which older adults can remain physically, mentally and socially active in their communities. Remaining engaged in meaningful activity in later life is considered a crucial component of successful aging (Kelly, 1993). According to Rowe and Kahn (1997), successful aging can be defined as “the avoidance of disability, maintenance of physical functioning, and active engagement with life” (as cited in Everard et al., 2000, p. 208). Meaningful occupation in later life has been known to have profound health benefits, both mentally and physically (Green, 2009). Regular participation in physical and social leisure activity is associated with a decrease in the likelihood of developing chronic illnesses such as heart disease, diabetes and stroke, as well as an improvement in overall functioning, quality of life, increased psychological well-being, increased longevity and reduced rates of institutionalization (Ashe et al., 2009; Bertera, 2003; Haley & Andel, 2010; Kelly, 1993). Based on these findings, it seems overwhelmingly evident that remaining physically and socially active is essential to maintaining a high quality of life for many older adults.

However, despite the reported benefits, participation in leisure time physical activity is often negatively associated with age (Bertera, 2003; Haley & Andel, 2010). Recent studies have found that up to 70% of community dwelling older adults over the age of 65 do not meet the recommended guidelines for physical activity, which suggest older adults engage in a minimum of thirty minutes of moderate activity up to five days a week (Ashe et al., 2009; Haley & Andel, 2010). This number increases when advanced
age is combined with chronic disease and functional disability (Ashe et al., 2009). Leinonen et al. (2007) found many community dwelling older adults have the desire to increase their levels of physical activity, but do not feel that their surrounding environment provides them with the opportunity to be as active as they would like, presenting an unmet activity need (as cited in Rantakokko et al., 2010). Older adults, particularly those living in urban environments are also at risk of social exclusion from civic activities and social relationships (Middling et al., 2011). A recent survey in Metro Vancouver concluded that it was difficult to make friends in the city; one in four people surveyed reported that they were often alone more than they would like to be. This survey also found people of all ages were retreating from community life and were unlikely to have participated in community activities within the past year (Vancouver Foundation, 2012). The Ministry of Health Services (2004) found older adults living in heavily populated areas of British Columbia reported lower levels of social support compared to those living in more rural areas of the province. They estimate that up to 30% of urban dwelling older adults experience some form of loneliness and social isolation (Ministry of Health Services, 2004). Therefore, it is critical to identify physically, mentally and socially beneficial leisure activities that are popular among urban dwelling older adults in order to maximize the potential of their engagement and reduce social exclusion and/or isolation in this portion of the population.

Gardening has been identified as a therapeutic leisure activity popular among older adults. In a study conducted by Bertera (2003), gardening was found to be the most common physical activity among community dwelling older adults with 51.8% of the sample having gardened in the past month. Gardening’s popularity is anticipated to rise as retiring baby boomers are expected to significantly increase the number of older gardeners (Ashton-Shaeffer & Constant, 2006). Research shows that unlike many high intensity physical activities, interest in gardening increases with age (Bhatti, 2006). Gardening tasks are considered to be mainly low to moderate in intensity and are suitable for the majority of older adults, while still providing aerobic and strengthening benefits (Park et al., 2008). Chen and Janke (2011) analyzed survey data from 3,237 adults over the age of 65 and found individuals who spent at least one hour gardening within the past week reported significantly fewer falls over the past two years when compared with non-gardeners. Considering that falls are the leading cause of injury
related deaths and place substantial demands on the health care system, gardening activities have the potential to be utilized in critical fall prevention programs (Chen & Janke, 2011). There are numerous other physical health benefits associated with gardening including improved overall physical functioning, reduced number of chronic conditions, such as, cardiovascular disease, HDL cholesterol, diabetes, and gastrointestinal hemorrhage, improved balance and gait speed, improved dexterity, improved coordination and lowered risk of developing dementia (Chen & Janke, 2011; Infantino, 2005; Milligan et al., 2004; Van Den Berg & Custers, 2011).

In addition to the physical benefits, gardening has reported psychological benefits and requires the use of many cognitive faculties. Gardening involves stimulation of all five senses promoting neurological function and is associated with improved cognition in older adults (Infantino, 2005). Larner reports that gardeners regularly utilize the following operations: “memory, for the shapes, colors, and names of plants; visuospatial skills for the layout of borders, arrangements; praxis, for the handling of plants and garden implements; and executive function, interest in the subject and ability to plan ahead” (2005, p. 796-797). Gardening is a popular pastime for older adults because it provides meaningful and challenging work, involves lifelong learning, produces tangible goals, promotes a sense of achievement and purpose, and provides a creative outlet and expression of identity (Ashton-Shaeffer & Constant, 2006; Burges Watson & Moore, 2011; Infantino, 2005; Gross & Lane, 2007; Pettigrew & Roberts, 2008). Infantino (2005) found that older female gardeners were able to display important traits of successful aging through meaningful gardening experiences such as, “resiliency, hardiness, adaptability, creativity, self-transcendence, and a positive outlook on life” (p. 15).

The desire to interact with nature is also a strong motivator for gardening participation in later life (Gross & Lane, 2007; Heliker et al., 2001; Infantino, 2005; Unruh & Hutchinson, 2011). Many older gardeners report feeling a strong spiritual connection with the natural world and experience a form of transcendence while gardening (Gross & Lane, 2007; Heliker et al., 2001; Infantino, 2005; Unruh & Hutchinson, 2011). Gardening allows individuals to have a unique interaction with nature that is both caring and reciprocal, involving a mutually beneficial partnership between older adults and their gardens (Gross & Lane, 2007; Infantino, 2005). Many of the sights, sounds and scents found in the garden evoke memories of significant people and places in the lives of older
adults and connect them with their past (Gross & Lane, 2007). Also, gardening can evoke themes of death and rebirth and may help older adults come to terms with their mortality (Bhatti, 2006; Unruh & Hutchinson, 2011).

Furthermore, gardening has restorative stress reducing benefits due to the close interaction one has with the natural environment. According to Jansen and Von Sadovszky (2004), restorative activities “easily engage our involuntary attention and possess qualities that include a sense of ‘being away’, extent, fascination, and compatibility” (p. 382). Activities involving nature have been found to be highly restorative and more relaxing when compared to indoor leisure pursuits (Berman et al., 2008; Jansen & Von Sadovszky, 2004). Kaplan’s attention restoration theory provides an explanation for nature’s restorative ability. Daily life requires individuals to focus their attention on given tasks, and over time, this may lead to direct attention fatigue causing irritability, stress and reductions in cognitive functioning (as cited in Norling & Sibthorp, 2006). Natural environments provide unusual and fascinating stimuli, which cause us to use involuntary attention and allows our directed attention to be restored (Berman et al., 2008). Older adults may be more susceptible to direct attention fatigue due to a reduced number of neurotransmitters compared to younger individuals and may benefit more from involvement in restorative activities (Jansen & Von Sadovszky, 2004). A study by Van Den Berg and Custers (2011) examined the stress reducing properties of gardening. In this study, 30 communal gardeners with a mean age of 57.6 years volunteered to perform a stress inducing ‘Stroop task’ then were randomly assigned to garden in their allotment plot or read indoors within their home for a period of 30 minutes. Participants in the gardening group showed stronger decreases in cortisol levels and improved positive mood, while participants in the indoor reading group reported deterioration in positive mood and only minimal decreases in cortisol (Van Den Berg & Custers, 2011). These findings support previous studies that claim natural environments can be psychologically beneficial to older adults and suggest that gardening may be one way to engage older individuals in restorative activity. Gardens provide a natural escape from urban life and act as a retreat for older adults, producing a calming and relaxing effect (Wakefield et al., 2007; Kingsley et al., 2009). Due to the frequent occurrence of gardening activities in later life and the many associated health benefits, research exploring gardening participation is becoming increasingly popular.
However, there is still little known about the social benefits of gardening for community dwelling older adults.

Community gardening projects engage community dwelling older adults in meaningful leisure activity and maximize the social benefits of gardening. Community gardens can be defined as “plots of land allocated to individuals to create gardens of their choice in a communal environment” (Kingsley et al., 2009, p. 209). They can be found in many forms and are often a reflection of the needs of the community in which they are established. The social benefits of gardening participation, which are commonly underrepresented in general gardening research, are emphasized in literature on community gardens. Community gardening projects combine meaningful occupation and beneficial physical and mental activity with a vital social component. As a result, members may benefit from an increased number of diverse social contacts, reduced social isolation and improved social cohesion within their community (Kingsley & Townsend, 2006; Milligan et al., 2004; Okvat & Zautra, 2011; Wakefield et al., 2007). Due to the large percentage of older adults in British Columbia living in urban environments, an in-depth exploration into the role of community gardens in potentially reducing social isolation is needed. Further investigation is necessary to gain a better understanding of the significance of the social relationships established within community gardens and the role of community gardens in facilitating social and civic engagement among older adults.

1.1. Study Purpose

Community gardening is a popular leisure activity enjoyed by an extensive number of older adults. In Metro Vancouver, there are currently 74 recognized community gardens with approximately 3,260 plots available to urban gardeners (City of Vancouver, 2011). With interest in community gardening activities on the rise, research in this area is timely. However, despite the growing attention focused on community engagement, active aging and age-friendly cities, very little research has been conducted on community gardening in later life and how participation in gardening may facilitate physical and social well-being. Therefore, the primary purpose of this study
was to portray the subjective experiences of older community gardeners to better understand the benefits of community gardening participation and how garden membership may support quality of life in older adults. With older adults being particularly vulnerable to social isolation and civic exclusion, the secondary focus of this study was to explore the social aspects of community gardening participation. This study also expanded on the existing literature by looking at the role of community gardening in building social capital in urban neighbourhoods. The primary research questions were: 1) How does participation in community gardening influence quality of life in older adults? and 2) In what ways does participation in community gardening projects facilitate social engagement among older adults?
2. Literature Review

There is a significant amount of research on the therapeutic benefits of outdoor environments and gardening activities for older adults in long term care facilities. Although currently limited, a small number of studies have begun to focus on the benefits of community gardening participation with a few focused on the experience of older gardeners. Several strategies were used to identify suitable literature for this review. First, an online library search was carried out to identify print sources and electronic journal articles from Simon Fraser University’s library catalogue. Second, a refined search was conducted using the following digital databases: Academic Search Premier; Ageline; Medline; PsycArticles; PsycInfo; Web of Science and Google Scholar. The following keywords were used in the search: ‘Benefits of Gardening’; ‘Gardening and Older Adults’; ‘Community Gardens’; ‘Allotment Gardens’; ‘Community Gardening and Well-being’; Community Gardening and Social Networks’; ‘Community Gardening and Social Capital’; ‘Restorative Activities’; ‘Social Engagement’; ‘Quality of Life’; ‘Active Aging’; ‘Successful Aging’; ‘Age Friendly Cities’ and ‘Leisure Activities for Older Adults’. Finally, articles recommended by the supervising MA thesis committee were also reviewed. Articles meeting the following criteria were included in this review: primary or partial focus on active aging, quality of life and social engagement in later life and/or gardening activities of community dwelling older adults or community gardening; written in English and published anytime between 1985 and the present date. Due to the limited body of empirical literature on community gardening, a few studies involving individuals under age 50 were incorporated in this review. Articles selected for this review include empirical studies, literature reviews, case studies, practice guidelines and government reports.
2.1. Active Aging

The physical and psychological health of urban dwelling adults is declining in many cities across the globe. According to a study by Thompson, Corkery and Judd (2007), this health decline can be attributed to the combination of increasing car dependency, long commute times, lack of safe un-polluted outdoor environments in industrialized centres, inactivity and poor eating habits. Inactivity and poor eating habits, particularly in later life, can lead to higher rates of developing “cancer, heart disease, diabetes, asthma, depression and emotional stress” (Thompson, Corkery & Judd, 2007, p. 161). Physical inactivity is a global problem causing approximately 5.3 million deaths per year (Triggle, 2012). As the proportion of older adults in the global population continues to increase, it is important to identify activities that promote healthy aging. The World Health Organization (WHO) argues that active aging, which can be defined as “the process of optimizing opportunities for health, participation and security in order to enhance quality of life”, is strongly associated with the presence of age-friendly environments (2007, p.1). While there are multiple factors contributing to the development of age-friendly cities, the inclusion of safe and accessible green spaces is a crucial component impacting older adults’ abilities to age in place and is one of the most frequently mentioned features of an age-friendly environment (World Health Organization, 2007). Community gardens increase the presence of green space in urban areas providing a safe location for physical activity and social gatherings, both of which are important components of active aging.

Participation in community life is another important aspect of successful or active aging. The baby boomer generation, now reaching retirement age, is motivated to stay engaged in life and connected to their community (Hinterlong & Williamson, 2007; Hrehocik, 2008). A study by Bowling explored older adults’ perceptions of active and successful aging and found older adults defined active aging as “having/maintaining physical health and functioning, leisure and social activities, mental functioning and activity and social relationships and contacts” (2008, p. 296). Existing research supports the idea that for many older adults, remaining physically, mentally and socially active is important to maintaining quality of life in later years. Improved quality of life and functional capacity is strongly related to remaining independent and aging in place
(Bowling, 2008; Jacobs et al., 2008). According to a report by the British Columbia Premier’s Council on Aging and Seniors’ Issues (2006), supporting community engagement and participation through volunteerism and providing age-friendly neighbourhoods that promote walking and recreational opportunities for all ages and functional abilities are important factors to help older adults remain independent. Due to the important role of age-friendly outdoor environments on physical, mental and social activities it is logical to take an in-depth look at the existing literature on community gardens. In particular, we need to examine how community gardens may be part of the neighbourhood-based resources that can boost activity levels, increase participation in community projects, improve quality of life and facilitate social engagement for older adults.

2.2. Quality of Life

The term ‘quality of life’ is a complex concept used broadly across many disciplines. The World Health Organization defines it as an “individual’s perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns”. Quality of life can be influenced by “the person’s physical health, psychological state, level of independence, social relationships, personal beliefs and their relationship to salient features of their environment” (1997, p. 1). According to Cummins, quality of life is impacted by both personal and environmental factors and has objective and subjective components. Quality of life can be improved by increasing the availability of one’s resources, maintaining autonomy, engaging in meaningful occupation, and experiencing a sense of belonging (2005). For the purpose of this study, subjective quality of life will be discussed as defined by the study participants. It was the goal of this research study to better understand older adults’ perceptions of how community gardening participation influenced their overall quality of life. This was achieved by exploring the physical, psychological and social factors associated with garden membership.
2.3. Defining Community Gardening

The City of Vancouver (2011) defines a community garden as a plot of land owned by the city, which is openly used by community members to grow and care for plants. Community gardening projects are traditionally run by non-profit organizations committed to community building and environmental enrichment. The American Community Gardening Association defines community gardens as “any piece of land gardened by a group of people...urban, suburban, or rural. It can grow flowers, vegetables or community. It can be one community plot, or can be many individual plots” (as cited in Barbolet, 2009). Glover defines them as “grass-root initiatives designed to improve the appearance of urban streetscapes, reflect the pride of their participants, and create community focal points and catalysts for neighbourhood improvement” (2004, p. 143). Community gardens are generally used for food production, and are often found in urban neighbourhoods where access to privately owned land is limited (Okvat & Zautra, 2011). However, due to the existing diversity in community gardens, it is difficult to find a single definition that accurately describes all gardening projects. As Glover (2004) states, community gardens are often more about addressing neighbourhood issues than gardening itself. Community gardens often reflect the unique needs of the specific area in which they are formed and may differ in terms of plant diversity depending on the local habitat. Communal gardening projects are becoming increasingly common throughout urban areas around the world and often bring life to abandoned lots rejuvenating decaying neighbourhoods (Wakefield et al., 2007). They may consist of separate plots rented annually by individual community members or be tended communally by a larger group of volunteers. A small annual fee may be required to reserve the right to garden an individual plot, with a usual range of $10-$20. Generally, each garden will have some form of voluntary committee which will organize general meetings and work parties to manage the general upkeep of the gardens’ grounds, assign plots, enforce bylaws and resolve conflicts (University of Missouri Extension, n.d.).

The purpose or shared philosophy of the garden may differ depending on what is desired by the community members operating the garden. Despite the many variations between gardens, one common characteristic is their dependence on the active
participation and collective responsibility of surrounding community members (Okvat & Zautra, 2011). The City of Vancouver “recognizes community gardening as a valuable recreational activity that can contribute to community development, environmental awareness, positive social interaction and community education” (2011, para. 1). Although, very little research has been conducted connecting community involvement in gardening with global improvements to the environment, recent research has argued community gardening is connected with individual, societal and global health (Okvat & Zautra, 2011; Wakefield et al., 2007). Okvat and Zautra (2011) argue that the well-being of humanity is intimately connected with the well-being of the earth. They claim community gardens produce the following environmental benefits: stabilizing the climate through carbon sequestration, reducing carbon emissions associated with food transport by producing local produce, and decreasing garbage and food waste by composting (Okvat & Zautra, 2011). They also argue that community gardens can be valuable teaching instruments where individuals can share information on sustainable living and organic gardening practices (Okvat & Zautra, 2011). Environmental awareness is generally accepted as a common characteristic of community gardens. In a time of continued globalization, characterized by climate change, concern over food security and high oil prices, community gardens are thought by many to provide stability and offer environmental and economic benefits (Barbolet, 2009).

2.4. History of Community Gardens

Historically, community gardens have arisen in response to a crisis such as war or famine and have been used as a means for producing alternative food supplies (Okvat & Zautra, 2011). In North America, community gardens first emerged in Detroit during the 1890s to provide workable land to the unemployed, teach work ethics to younger generations and produce food for the poor (University of Missouri Extension, n.d.; Wang, 2006). According to a report by Lawson (2005), there were upwards of 5000 gardens in New York City cultivated by unemployed workers during the Great Depression (as cited in Okvat & Zautra, 2011). This trend continued during World War II when the American government began encouraging what were called ‘Victory Gardens’. ‘Victory Gardens’ were developed in backyards and unused city land as a war
effort, and by 1944 these gardens produced up to 40% of the vegetables consumed in the United States (Okvat & Zautra, 2011). At the end of World War II, industry changes and over population in many North American cities caused individuals to recreate community gardens as centres for community activism. The 1970s saw a rebirth of community gardens which were now being used to fight the problems facing inner cities, address environmental concerns and counteract rising food prices (University of Missouri Extension, n.d.). Similar concerns are still addressed in modern day community gardens, which focus on inexpensive food production, community building and environmental awareness. Today, community gardens impact society in the following ways: reduce waste through composting; reflect solar radiation; absorb carbon; provide habitats for local wildlife; provide opportunity for low income neighbourhoods to boost economic development; create community gathering spaces; build community networks; increase green space; promote food security and healthy lifestyles; bring awareness to local food cycles; encourage community members to eat locally; create biodiversity; facilitate positive intergenerational connections; support skills development and community workshops; and provide a cost effective way to revitalize a neighbourhood (Barbolet, 2009; Cameron, Manhood & Pomfrett, 2010).

2.5. Community Gardening and Social Engagement

Developing community gardens and green spaces in urban areas is becoming a topic of interest in many large cities as “increased urbanization and associated social isolation are frequently blamed for the health problems confronting modern society” (Kingsley & Townsend, 2006). Gardening activities are linked with an increased number of social contacts in community dwelling older adults and may help reduce social isolation (Bertera, 2003; Infantino, 2005). Community gardening facilitates social interaction and requires active participation, which are key components of social engagement. Social engagement is defined by Bassuk, Glass and Berkman (1999), as the “maintenance of social connections and participation in social activities” (as cited in Krueger, 2009, p. 46). Higher levels of social engagement were found to be associated with improved cognitive function among a study of 838 older adults without dementia (Krueger et al., 2009). In a survey of 6,596 adults over the age of 60, gardening was
found to have the greatest potential for providing social interaction and was consistently associated with a high number of social contacts amongst the study participants (Bertera, 2003). Studies specifically focused on community gardening also report significant social benefits for older members (Kingsley et al., 2009; Kingsley & Townsend, 2006; Middling et al., 2011; Milligan et al., 2004; Okvat & Zautra, 2011). Studies show community gardeners find the main benefits of membership to be increased social contact, interaction with people from different cultures and socio-demographic backgrounds, and reduced social isolation (Middling et al., 2011; Milligan et al., 2004; Okvat & Zautra, 2011). Although, neighbourhood green spaces have also been associated with increasing social contact amongst community members, community gardens have the ability to create close-knit and meaningful relationships (Okvat & Zautra, 2011). Community gardens promote the sharing of resources such as, “seeds, tools, knowledge, ideas, produce, culture, and recipes”, encouraging meaningful communication and personal interaction amongst members that is otherwise uncommon in public green spaces (Okvat & Zautra, 2011, p. 378; Wakefield et al., 2007; University of Missouri Extension, n.d.).

Increasing social networks is particularly important for older adults who are often more vulnerable to social isolation, loneliness and depression (Pettigrew & Roberts, 2008). Social networks can function as buffers against life stressors and age related decline improving self-efficacy and well-being among older adults (Milligan et al., 2004; Okvat & Zautra, 2011). Social isolation is particularly common among older adults residing in disadvantaged urban centres who are at a greater risk of experiencing “poor health, poverty, social isolation, loneliness, vulnerability to crime and a lack of opportunities to engage in civic activities” (Middling et al., 2011, pg. 112). Scharf, Phillipson, Smith and Kingston (2002) found older adults residing in urban areas often faced multiple social disadvantages, including exclusion from “material resources, social relations, civic activities, basic services and the neighbourhood” (as cited in Middling et al., 2011, pg. 113). One study looking at community gardeners in Port Melbourne, Australia found that the majority of members specifically joined the garden to increase their social networks beyond family and close friends and reduce isolation (Kingsley et al., 2009). However, not all members benefit equally from community gardening, nor do all members have the same motivation to interact and build social ties with others.
(Milligan et al., 2004). A second study looking at older gardeners in the UK found there were a variety of different types of community gardeners. Some older individuals preferred to be ‘lone gardeners’ valuing individuality and taking strict ownership of their allotment reducing their opportunity to expand their social network (Milligan et al., 2004).

Overall, the majority of older community gardeners felt they benefitted from increased interaction with others, while noting that occasional disagreements and personality conflicts do exist (Kingsley & Townsend, 2006; Milligan et al., 2004; Okvat & Zautra, 2011). Some of the common challenges reported by inner city community gardens included retaining enough members to successfully maintain the garden and rebuilding after the garden was damaged by vandalism and theft (Middling et al., 2011). There is limited research examining the significance of the social relationships formed between garden members and the extent of their influence on older adults’ quality of life outside of the garden environment. A study by Kingsley and Townsend (2006) found that the majority of members claimed they did not formally connect with each other outside of the community garden; however, more research is needed to confirm this finding. Very few community gardening studies specifically focus on the experience of older garden members; therefore, the nature of these social relations remains unclear.

2.6. Community Gardening and Intergenerational Contact

Community gardens are commonly made up of a diverse combination of members from different age groups (Okvat & Zautra, 2011; McKee, 1996). One of the reported social benefits of communal gardening is the intergenerational interaction that takes place between members (University of Missouri Extension, n.d.). The community garden provides a place for members of all ages to transfer knowledge and acquire new skills (Kingsley et al., 2009; Okvat & Zautra, 2011; University of Missouri Extension, n.d.; Wakefield et al., 2007). In one qualitative study, the oldest member of the community garden in Port Melbourne, Australia reported benefitting from knowledge acquired in the community garden stating, “it doesn’t matter how old you are, you can still learn” (Kingsley et al., 2009, p. 212). Some community gardens may have an educational focus and provide formal mentorship between older and younger members of the
community (University of Missouri Extension, n.d.). Often an exchange of skills will take place with older gardeners contributing wisdom and experience and younger members often providing physical strength and stamina (Okvat & Zautra, 2011). The meaningfulness of these intergenerational interactions and the influence they may have on the quality of life of older adults is unknown as there is presently no research examining the effect of these relationships outside of the garden. Community gardens may provide an environment that facilitates and supports intergenerational relationships but more in-depth research is needed to support this claim.

2.7. Defining Social Capital

Social capital is a social theory that has become popular within recreational leisure studies. As defined by Bourdieu (1986), social capital is the “aggregate of actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition” (as cited in Glover, 2004, p. 145). In other words, when community members invest time in developing social relationships, they are essentially rewarded in return (Glover, 2004). There is individual benefit in social capital because it can help people achieve goals as a collective that may be unreachable for isolated individuals (Glover, 2004). As stated by Putnam (1995, p.67), social capital involves “features of social organizations, such as networks, norms, and trust, that facilitate actions of cooperation for mutual benefit” (as cited in Kingsley & Townsend, 2006). Social capital is obtained by membership within a given social structure and the maintenance of this structure is dependent on the continued interaction of its members resulting in sustained investment in the social relationships (Glover, 2004). Social capital between community members is often based on reciprocity and trust (Kingsley & Townsend, 2006). Social cohesion is an important by-product of social capital and is commonly found within community gardens (Kingsley & Townsend, 2006; Wakefield et al., 2007). A lack of social cohesion in many modern urban communities has been associated with higher incidents of morbidity and mortality (Kingsley & Townsend, 2006).
There are three main types of social capital: bonding, bridging and linking social capital. Bonding social capital is generally found between close friends and family, and involves trusting networks of people sharing a common social identity, while bridging social capital involves weaker ties between members of society who may have similar goals but generally come from different social backgrounds and linking social capital concerns the connecting of unlike individuals who are in very different situations (Firth, Maye, & Pearson, 2011; Kingsley & Townsend, 2006). Although, generally viewed as being a positive by-product of a strong community, social capital can be used to protect the interests of a particular group or organization, which may not be in the best interest of the general public (Firth, Maye, & Pearson, 2011). Therefore, social capital may not be equally available and/or beneficial to all members of a community.

2.8. Community Gardens and Social Capital

Community gardens are ideal examples of social organizations that depend on the personal investment of their members. Despite the common links between community gardening projects and the construction of social capital, very few studies explicitly discuss this relationship (Glover, 2004). One such study found that both bonding and bridging ties existed between members of the ‘Dig In’ community garden in Melbourne, Australia (Kingsley & Townsend, 2006). Bonding social capital was mainly found between family members sharing a garden plot and bridging social capital was found to exist between members who claimed they would otherwise not have met outside the garden (Kingsley & Townsend, 2006). The informants in this study believed that communal gardening activities strengthened their ties to the community and they felt that they benefitted from the social relationships formed within the garden (Kingsley & Townsend, 2006). Although gardeners felt they were provided with the opportunity to meet a variety of individuals through garden membership, the study showed there was very little diversity in terms of ethnicity and social class between members (Kingsley & Townsend, 2006). Other studies have found similar themes of connectivity and reciprocity amongst community gardeners (Milligan et al., 2004; Wakefield et al., 2007). A study looking at the health benefits of community gardens in South-East Toronto found gardening participation provided community development through skills training and
education and bolstered community pride, while improving the overall ‘health’ of the community (Wakefield et al., 2007).

Alaimo, Reischl and Ober Allen (2010) found the presence of social capital in a given neighbourhood was partially dependent on individual investment in neighbourhood activities. Neighbours reported having different perceptions of social capital because of differences in participation rates. Their research suggests the norms, values and beliefs of individuals can only become “characteristics of neighbourhoods when enough residents share the same perceptions of the social structure” (p. 511). To improve neighbourhood social capital they recommend encouraging city dwellers to get involved in multiple neighbourhood activities, such as community gardening, neighbourhood beautification projects, and block meetings and/or parties (Alaimo, Reischl & Ober Allen, 2010). The greater number of people participating in neighbourhood activities may increase the perception of social capital within a given neighbourhood even among neighbours who are not actively participating. Therefore, community gardens may have the greatest influence on social capital when members make an effort to work together with other neighbourhood organizations or groups (Alaimo, Reischl & Ober Allen, 2010). Additional studies suggest increased involvement in community gardening may boost participation in other social programs and encourage general community engagement across all age groups (Riordan & Williams, 1988; Wakefield et al., 2007). However, more research is needed in order to understand how social capital developed in the communal gardening environment might extend into the larger community context. A study by Glover (2004) found that there could be negative aspects of social capital when garden members have unequal social positions in the garden community and are unable to access or benefit from social capital. While core members benefited, fringe members felt detached from the social network and were not able to use social capital to fulfill their individual goals (Glover, 2004). No studies were found investigating the availability of social capital for older community garden members. Future research is needed to explore older adults’ perceptions of social capital and the potential benefits gained through group membership.
2.9. Community Rejuvenation

The inclusion of urban community gardens in otherwise vacant or abandoned lots is associated with reduced crime and increased property values (University of Missouri, n.d.). Community gardens have the potential to renew depressed urban environments, reform city streetscapes, and represent catalysts for positive change (Glover, 2004). A growing trend across Canada is the development of community gardens on ‘brownfields’. A ‘brownfield’ can be defined as “formerly contaminated commercial or industrial properties that have been remediated and are abandoned or underutilized” (Devine, 2007). Community gardens located on ‘brownfields’ in Vancouver, Canada were the result of strong community demand for more gardening space and the desire to build community in what were once dumpsites (Devine, 2007). One study found that the presence of greater green space surrounding a building was associated with fewer reported crimes (Okvat & Zautra, 2011). Another study conducted in Portland, Oregon found that community initiated restoration of public squares improved the physical appearance of the neighbourhood, increased socialization amongst community members and improved pride and feelings of belonging to the community (Semenza et al., 2006). Community restoration requires high levels of involvement and investment (Semenza et al, 2006). By developing a garden in an urban area, community members are claiming ownership of the space. Maintaining a garden takes time and commitment, and cared for space is generally associated with less anti-social behaviour, such as vandalism (Blomley, 2004). In addition, community gardens are generally considered to be aesthetically pleasing and contribute to beautifying urban cityscapes (Wakefield et al., 2007). In low-income neighbourhoods, gardens can positively improve the appearance and make members from the larger community feel safer and more optimistic towards the area, reducing stigma (MalaKoff, 1995; Okvat & Zautra, 2011). Social capital is often formed when community members join together to create a gardening project amidst a decaying urban environment. However, the threat of theft, vandalism, substance abuse and squatting occurring within garden parameters may persist in even the most cared for spaces.
2.10. Supportive Gardening Environments for Older Adults

Older adults commonly do not spend enough time outdoors (Sugiyama & Thompson, 2006). A combination of physical or cognitive decline and environmental barriers make getting outdoors for leisure activity more difficult as one ages and often an unsupportive outdoor environment will lead to unmet physical activity need in older adults (Rantakokko et al., 2010; Sugiyama & Thompson, 2006; Suzuki & Murase, 2010). A study by Jacobs et al. (2008), found that independent community dwelling older adults who went outdoors daily had reduced levels of functional decline and better overall health than those who went out less frequently. Providing accessible community gardens is one way to offer environmental support to older adults in the community and encourage outdoor leisure activity, which is associated with improved quality of life (Sugiyama & Thompson, 2006). Locating community gardens in public areas that are close to community centers, senior centers or parks make them easily accessible for older adults and increases interaction with outside members of the community (Kingsley et al., 2009). Providing plots with raised garden beds can allow individuals in wheelchairs to participate and requires less bending for older adults who are only able to garden from a seated position (University of Missouri, n.d.). Also, designing community gardens with spaces to sit and rest is important and was described by members in one study as being “fundamental to social contact” (Kingsley & Townsend, 2006, p. 532). Having easy access to washroom facilities is also a major concern for older adults, as a lack of accessible amenities may limit the time they are able to spend in the garden (Kingsley & Townsend, 2006). Providing an accessible and supportive space for older adults to engage in outdoor leisure activity and interact with others is a requirement of any age-friendly city (World Health Organization, 2007).

Participation in communal gardening may provide many older adults with a satisfying occupation in later life. However, studies have found that there are negative impacts on older gardeners when they are physically no longer able to maintain their gardens (Bhatti, 2006; Gross & Lane, 2007). Due to older adults’ emotional investment in gardening and strong emotional attachment with their gardens, they can experience a sense of loss and mourning when they feel they can no longer manage (Gross & Lane, 2007). Research on community gardening shows that membership can prolong
gardening activities for older adults (Milligan et al., 2004; Van Den Berg et al., 2010). Studies found older adults gardening independently at home often became overwhelmed by their gardens after experiencing declines in physical health and mobility, but many older gardeners with moderate to severe disabilities were able to continue gardening communally due to the support of other members and the manageability of being responsible for a smaller accessible garden plot (Milligan et al., 2004; Van Den Berg et al., 2010). The support provided in community gardens can be specifically beneficial to the oldest-old and those experiencing physical disability allowing them to be meaningfully engaged and to feel like valuable members of the group regardless of functional ability (Milligan et al., 2004). However, it is important to be aware of environmental factors that may contribute to falls, such as uneven surfaces. A study by Li et al. (2006) found that older participants who spent more time involved in outdoor leisure activity were more likely to have an outdoor fall and up to 73% of outdoor falls were related to environmental barriers. Presently, there is very little research looking specifically at improving community garden accessibility for older adults and persons with disabilities.

2.11. Limitations in Existing Research

Overall, there is very limited empirical research on community gardening. There is even less research with a specific focus on the experience of older communal gardeners. Moreover, much of the current evidence supporting community gardening is anecdotal and relies heavily on the subjective experience of young, healthy, non-ethnic, middle class community gardeners (Wakefield et al., 2007). With the exception of the small number of studies focused on the physical benefits of gardening, there is little to no experimental research supporting the benefits of community gardening participation. However, as gardening has different meanings and layers of significance for individuals, qualitative studies providing an in-depth exploration of the subjective experiences would be an appropriate research method. A major segment of research on community gardens is based on single case studies, which may make those findings difficult to generalize based on the many differences existing between community gardens and the diverse makeup of their members. While survey and interview data is often utilized, very
few studies involved ethnographic approaches. Spending a significant amount of time actively participating in a community garden may allow the researcher to validate anecdotal data. Okvat and Zautra (2011) argue there is a need for research to connect the affective outcomes of nature with broader community based outcomes. There is a gap between the gardening experience at the individual level and the subsequent impact on the community and civic involvement. Also, despite the apparent connection between community gardening projects and social capital, this relationship has not been fully explored by existing literature.

2.12. Research Directions

Research is needed to explore the social benefits of community gardening for older adults. While existing research attempts to explain the beneficial aspects of community gardening at the micro level, very little is known about how these individual relationships influence social and civic engagement. Research specifically looking at the role of older communal gardeners in building social capital and how they can potentially benefit from group membership would help further knowledge in this area. It is also unclear as to how these benefits might impact social networks outside of the gardening environment and influence social engagement in the larger community. Very little attention has been given to how supportive social networks and bridging social capital are maintained when the older adult requires support outside of the gardening domain or whether relations are maintained during the off season when gardening activity is limited. An in-depth qualitative study would provide information about the sustainability of these relationships. At a more fundamental level, the characteristics and significance of the relationships formed among older gardeners is not well understood. Moreover, we need research examining the impact of these relationships on the older adults’ quality of life. Finally, research examining the potentially diverse experiences influenced by older adults’ age and functional abilities would be helpful to have a nuanced understanding of the benefits received from community gardening participation and the potential effect on active aging.
3. Methods

3.1. Research Design

This study set out to better understand how participation in community gardening influences quality of life in older adults and to explore the ways participation facilitates social engagement among older gardeners. In order to accomplish these objectives, a qualitative research design was used. The goal of qualitative research is “understanding human beings’ richly textured experiences and reflections about those experiences” (Jackson, Drummond & Camara, 2007, p. 22). Qualitative methods allow the researcher to uncover new or different understandings of the social reality under study (Jackson, Drummond & Camara, 2007). Inductive method was used with qualitative interviews and ethnographic observations allowing development of rich information. Qualitative research generally utilizes a smaller sample size to facilitate a close relationship between the researcher and study participants allowing “fine-grained, in-depth inquiry in naturalistic settings”, which is often recommended when conducting an exploratory study (Crouch & McKenzie, 2006, p. 483). As existing research in this area was relatively limited, qualitative methods were most appropriate to explore and identify the key issues. The main advantage of using this method was obtaining a rich understanding of the phenomenon derived through in-depth interview data and ethnographic ‘thick-descriptions.’

3.2. Study Site

This study is a single case study of Cottonwood Community Garden. Cottonwood Community Garden is located on Malkin Avenue between Hawks and Raymur in the Strathcona neighbourhood of East Vancouver, Canada. This community
The garden is operated by a non-profit organization and is a positive example of an urban garden which successfully arose in a socially disadvantaged environment. Cottonwood is labelled as one of British Columbia’s ‘brownfield’ gardens, meaning it was once considered an industrial waste site (Devine, 2007). The garden was established in 1991 as an expansion of an older neighbouring garden, Strathcona Community Garden, located in the same neighbourhood. According to Kellhammer (n.d.), one of the garden’s original members, Cottonwood has a unique and long standing history in this East Vancouver neighbourhood. Before it was an established community garden, it began as the result of ‘guerrilla’ gardening. Kellhammer and others from the neighbourhood began squatting on the vacant city land, which was approximately 3-acres at the time. In an effort to provide more gardening space in the East End and stop the development of a freeway on Malkin Avenue, guerrilla gardeners began to occupy the space (Kellhammer, n.d.). These community members had to first clear the land of commercial debris and years of accumulated garbage. Eventually, this grassroots initiative was recognized by the City of Vancouver and the gardeners were granted a long-term lease of the land. Afterwards, the gardeners received grants from the Vancouver Foundation and the Vancity Envirofund, which allowed them to build a water irrigation system, tool shed, green house and pond. Careful consideration was put into the design of the garden in order to allow it to develop naturally in a manner that would best accommodate gardeners and wildlife (Kellhammer, n.d.).

Today, Cottonwood Garden is 4-acres in size with approximately 140 garden plots. In 2010, Cottonwood Community Garden opened an accessible expansion featuring the city’s first fully accessible and universally designed gardening plots (Burrows, 2010). The garden is divided into two distinct sections, the accessible expansion and the older original garden. The garden has a well-established infrastructure including the following features: fully accessible raised gardening beds; solar green house; communal tool shed; community compost; extensive communal/shared areas which include apple, plum, pear, sour cherry, persimmon, mulberry, fig, and Asian pear trees; raspberries, blueberries, and cranberries; native garden with plant species indigenous to BC; cultural garden inspired by plant species native to Asia; perennial flowers and shrubs; several types of bamboo; ornamental trees and shrubs and beehives (Cottonwood Community Gardens, n.d.). The garden has
monthly work parties where gardeners work together to maintain the garden's communal areas, share a pot luck lunch and attend a monthly meeting to discuss garden related business (see Appendix D for more information on garden policies). Cottonwood Garden belongs to the Strathcona Community Gardeners Society, which is a non-profit organization made up of members from both Cottonwood and Strathcona Community Gardens. Garden members are elected to sit on the Society’s Board of Directors at the Annual General Meeting held in March. Cottonwood Community Garden is not fenced and is open to all people. It is accessible for all ages and functional abilities. The annual membership fee is $5 per person and an annual plot fee is $15 per gardening plot. This community garden was chosen as a study site because it is well established in an urban neighbourhood, an example of positive grassroots activism, it is a large garden with many members, and has a large amount of common space that is tended communally. In addition, the accessibility of the garden’s expansion allowed the inclusion of older adults with functional disabilities, which was important in understanding the gardening experiences of a diverse group of individuals.

3.2.1. **Environmental Assessment of Cottonwood Community Garden**

The presence of green space is an important feature of an age-friendly community. However, many neighbourhoods have environmental barriers that prevent older adults from using outdoor spaces adequately (World Health Organization, 2007). To improve access to green spaces, such as community gardens, it is important to consider the design of the built environment in order to achieve universal accessibility. The accessibility of Cottonwood Community Garden was a major reason why this garden was chosen as a study site; therefore it was important to include an environmental assessment of the garden. The design guidelines for outdoor spaces and buildings provided by the World Health Organization’s, *Global Age-friendly Cities: A Guide*, and the City of Vancouver Persons with Disabilities Advisory Committee and Seniors Advisory Committee’s, *Accessible Community Garden Guidelines*, were used as reference for this assessment. Photographs of the garden taken by the researcher are included in this report to aid in the assessment and visually document the functionality of the space and the degree to which it facilitates social interaction. In addition, study participants were asked if they would make changes to the design of the garden to
improve accessibility and increase social interaction. Their recommendations are summarized in the findings section of this report.

The quality of outdoor space directly impacts the quality of life of older adults living in a given neighbourhood and is an important factor in their ability to continue to age in place (World Health Organization, 2007). According to the World Health Organization’s guidelines, green spaces should be safe, well looked after, have adequate shelter and seating, and easy access to toilet facilities (2007). The City of Vancouver Persons with Disabilities Advisory Committee and Seniors Advisory Committee’s guidelines (2009/2010) provide detailed information on the design of garden plots, pathways, access to irrigation water and seating. A minimum of 5 to 20 percent of garden plots within a community garden should be accessible raised beds meeting the following criteria: 3½ feet wide if there is access from both sides and 1¾ feet if only accessible from one side; beds should be between 2 to 3 feet in height; there should be a minimum of 4 feet of accessible surface surrounding the raised bed to allow a turning radius for a person using a wheelchair; and corners should be brightly marked to assist individuals with low visual acuity. Accessible paths should have surfaces that are “smooth, level, wheel-able, with tactile guide markers”; concrete and asphalt are the most ideal surfaces, although compacted crushed stone makes a less ideal but more affordable alternative. Pathways should avoid bark mulch, grass, dirt, and gravel and there should be a minimum of one access path that is at least 5 feet in width, while all additional pathways should be a minimum of 3 feet in width (City of Vancouver Persons with Disabilities Advisory Committee & Seniors Advisory Committee, 2009/2010, p. 2). When designing an accessible community garden, it is also important that gardeners have easy access to a water tap that is a minimum of 2 feet high, located in close proximity to raised beds and brightly marked. A second option is the installation of a drip watering system. Finally, appropriate seating should be readily available throughout the garden.

Cottonwood Community Garden is made up of two distinct sections, the older original garden and the new accessible expansion. The older section of the garden is not fully accessible, while the expansion features full accessibility for older adults and persons with disabilities. While the original section of the garden does not meet the accessibility guidelines, the expansion sufficiently meets the majority of the criteria.
discussed above. It should be noted that due to the age of the garden and its unique development, it would be difficult to re-design the original section of the garden to meet current accessibility guidelines. First, features of the accessible expansion will be discussed followed by an assessment of the original section of the garden. Cottonwood’s accessible expansion was completed in the summer of 2010 and was largely designed by one of the study participants, Debby, who is a member of the City of Vancouver Persons with Disability Advisory Committee. She believes that persons with disabilities and seniors should not be excluded from community gardening or segregated to the outskirts of a community garden, but should have the same access as individuals free of disability. The expansion features a mixture of accessible raised gardening beds and traditional in-ground plots so people requiring an accessible bed are not separated from gardeners who do not. The expansion started with ten accessible raised beds with the ability to modify the in-ground plots on a needs basis. During the study period, two in-ground plots within the expansion section were converted to accessible raised beds, suggesting there was a demand for accessible plots.

Cottonwood’s accessible expansion features easy access from the larger green space adjacent to the community garden providing visual access to the neighbouring public park, which may improve security and invite visitors from the surrounding neighbourhood (see Figure 1). The expansion area also features wide level pathways made of compacted crushed rock, which provide adequate space for individuals using walkers and wheelchairs and a wheel-able even surface to aid with mobility (see Figure 2). These pathways provide accessibility for individuals with mobility problems and increased space for baby carriages and cyclists making them universally beneficial. However, the inclusion of concrete or asphalt surfaces would further improve accessibility. Figure 3 provides a good example of the accessible raised beds available in Cottonwood Community Garden. These beds meet the width and height requirements proposed by the City of Vancouver Persons with Disabilities Advisory Committee and Seniors Advisory Committee’s design guidelines. Figure 4 displays the balance of raised and traditional in-ground gardening plots found in the expansion area. Having a mixture of plot designs ensures disabled or senior gardeners are not segregated from gardeners without the need for an accessible bed, which may facilitate intergenerational interaction. The visual access existing in this section of the garden was also considered
to improve social interaction between gardeners, as they were able to see theirighbours several plots over making them more likely to have some form ofcommunication with a wider circle of gardeners. Some participants felt there was more of a community feeling in the expansion, which may be related to visual access. As mentioned in the design guidelines for accessible community gardens, access to an easily accessible irrigation water source is crucial for gardeners with any form of mobility impairment. Cottonwood’s accessible expansion features raised water taps located within close proximity of every raised bed (see Figure 5). Although, the water taps were at appropriate height and in ideal locations, they could be brightly marked to improve visibility. Figure 6 is an example of an accessible raised bed with attached seating. Many of the raised beds in this section of the garden provided a place to rest, which was ideal for older adults. Seating in the remainder of this section of the garden was limited to help reduce loitering among the homeless, prostitutes and drug users who frequently inhabit this Strathcona neighbourhood.
Figure 1. Entrance of Accessible Expansion

Figure 2. Pathways in Accessible Expansion
Figure 3.  
Raised Gardening Beds in Accessible Expansion

Figure 4.  
Mixture of In-ground and Raised Beds in Accessible Expansion
Figure 5. *Raised Water Taps in Accessible Expansion*

Figure 6. *Attached Seating in Accessible Expansion*
The original section of Cottonwood Community Garden was established through “gorilla activism” approximately 21 years ago. This section of the garden includes vast communal areas and features a large number of traditional in-ground garden plots many of which are in close proximity to each other. There is very little allotted space between garden plots making manoeuvring difficult. There are also sections of the garden located on uneven surfaces and many plots are sloped. Figures 7 & 8 illustrate the general layout of this section of the garden; however, there is substantial variety from plot to plot. Unlike the expansion, this section of the garden is less visible from the surrounding green space of the neighbouring public park (see Figure 9). However, gardeners felt there were many positives associated with having this densely covered area. The large trees and dense shrubbery helped block out noise pollution from the many warehouses lining the vicinity of the park and created a secluded natural environment and animal habitat, which many described as an “oasis”. On the other hand, the lack of visual access to the garden may reduce safety and limit social interaction as visual barriers cut this section of the garden off from the surrounding neighbourhood and reduced gardeners’ visual access to each other. Study participants with garden plots in this section of the garden were more likely to only interact socially with garden members who were in neighbouring plots. A few participants also noted feeling separated from the expansion area and reported not knowing many of the individuals gardening in that section. The pathways throughout the original section of Cottonwood Garden are surfaced with bark mulch, which is not ideal for persons in wheelchairs or with mobility problems. The pathways are uneven and are much narrower than the pathways in the expansion section. Access to irrigation water taps is also less ideal meaning gardeners in this section may have to carry a hose or watering canister to water their garden plot, which may be difficult for persons with mobility problems who will also have to bend down to use the taps. Currently, Cottonwood’s meeting area, shared compost, green house and tool shed are all located in the original section of the garden limiting accessibility. However, the garden is planning to build a wheelchair accessible tool shed featuring adaptable gardening tools and relocate their meeting area to the expansion in an effort to make the garden more accessible. Figure 10 shows the garden’s current meeting area where the potluck lunches and general meetings are held on the last Sunday of each month.
Figure 7. Layout of Original Garden

Figure 8. Traditional In-ground Gardening Plots in Original Garden
Figure 9. Entrance to Original Section of Cottonwood Garden

Figure 10. General Meeting Area Located in Original Garden
Cottonwood Community Garden is a combination of new and old featuring both accessible and non-accessible environments. When taking into consideration the history of this garden, it is easy to see why the original section does not meet modern accessibility standards. However, much effort has been made on part of the gardeners to continue to transform their garden into a universally accessible space functional for all persons. The garden’s expansion was thoughtfully designed and features accessible raised beds, wide even pathways, and raised water taps. However, there was limited seating in the expansion apart from individual benches attached to some of the raised gardening beds, there was also limited shelter in this section exposing gardeners to sun, rain and wind, visual markers on the corners of the raised beds, water taps and pathways could also be incorporated and/or improved and the accessible expansion was the section of the garden located the farthest distance from the neighbouring park’s public washroom facilities. In addition, the location of the garden in the Strathcona neighbourhood of East Vancouver raises some concerns over security. Despite the fact that the garden is cared for and well maintained, there is the issue of homelessness, drug and alcohol abuse, and prostitution in the area and the garden environment can provide an attractive location for squatting.

3.3. Study Participants

Purposive and snowball sampling techniques were used to recruit a total of 11 participants from Cottonwood Community Garden. Participation in this study was voluntary and was initially open to all English speaking garden members 60 years or older; however, the age was lowered to 50 years during the final stages of the data collection process in order to attract additional participants. The sample was made up of 8 females and 3 males between the ages of 50 and 80 years. In order to gain access to garden members, an email was sent to the garden’s website introducing the researcher and explaining the proposed study. Subsequently, a meeting was arranged with one of the gardeners involved in the garden’s administration. This gardener acted as a key informant throughout the study and helped identify potential participants. Following this meeting, an email was sent out to all garden members inviting them to participate in the study and recruitment posters were hung at the garden’s information kiosk. A few
gardeners volunteered to participate in the study after receiving the email invitation, while others were approached in the garden by the researcher or key informant and personally invited to participate. An attempt was made to include participants of various ages and functional abilities, as well as individuals gardening in Cottonwood’s accessible expansion.

Each study participant was asked to fill out a socio-demographic questionnaire after providing informed consent in order to gather background information (see Appendix B). Table 1 summarizes the findings from this questionnaire. Of the 11 participants, 10 agreed to complete the questionnaire, with one participant refusing. The majority of the gardeners participating were currently retired, with only two employed part-time in the work force. All participants had at least some college or technical training, with six of them with an undergraduate degree and one individual with a graduate degree. Study participants’ living situations varied, with four living alone, three living with a spouse or partner, two living with a spouse or partner and their adult children and one living with other family or friends. The household income of the participants varied from under $20,000 per year to over $60,000 per year, with the average household income between $20,000 and $39,999 per year. All participants reported their overall health positively, with two reporting it as excellent, three as very good and five as good. However, there was variation in functional ability with one participant using a wheelchair. Membership in Cottonwood Community Garden varied in length, with six participants having been members for five years or less, one between 6 and 10 years, two between 11 and 15 years and one participant having been a member in the garden for 18 years.
<table>
<thead>
<tr>
<th>Socio-Demographics</th>
<th>Participants (n)</th>
<th>Participants (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3</td>
<td>27%</td>
</tr>
<tr>
<td>Female</td>
<td>8</td>
<td>73%</td>
</tr>
<tr>
<td>Age Range:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-60 years</td>
<td>2</td>
<td>20%</td>
</tr>
<tr>
<td>61-70 years</td>
<td>6</td>
<td>60%</td>
</tr>
<tr>
<td>71-80 years</td>
<td>2</td>
<td>20%</td>
</tr>
<tr>
<td>Living Situation:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Live alone</td>
<td>4</td>
<td>40%</td>
</tr>
<tr>
<td>Live with spouse/partner</td>
<td>3</td>
<td>30%</td>
</tr>
<tr>
<td>Live with spouse/partner &amp; adult children</td>
<td>2</td>
<td>20%</td>
</tr>
<tr>
<td>Live with other family or friends</td>
<td>1</td>
<td>10%</td>
</tr>
<tr>
<td>Education:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some college/technical training</td>
<td>3</td>
<td>30%</td>
</tr>
<tr>
<td>Completed college or university degree (undergraduate)</td>
<td>6</td>
<td>60%</td>
</tr>
<tr>
<td>Completed graduate degree</td>
<td>1</td>
<td>10%</td>
</tr>
<tr>
<td>Employment Status:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed part-time</td>
<td>2</td>
<td>20%</td>
</tr>
<tr>
<td>Retired</td>
<td>8</td>
<td>80%</td>
</tr>
<tr>
<td>Household Income:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $40,000 per year</td>
<td>6</td>
<td>60%</td>
</tr>
<tr>
<td>$40,000-$79,999 per year</td>
<td>4</td>
<td>40%</td>
</tr>
<tr>
<td>Overall Health:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excellent</td>
<td>2</td>
<td>20%</td>
</tr>
<tr>
<td>Very Good</td>
<td>3</td>
<td>30%</td>
</tr>
<tr>
<td>Good</td>
<td>5</td>
<td>50%</td>
</tr>
<tr>
<td>Years as Community Garden Member:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5 years</td>
<td>6</td>
<td>60%</td>
</tr>
<tr>
<td>6-10 years</td>
<td>1</td>
<td>10%</td>
</tr>
<tr>
<td>11-20 years</td>
<td>3</td>
<td>30%</td>
</tr>
</tbody>
</table>
3.4. Data Collection

Multiple methods were used to collect data for this study in order to gather a breadth of information. In-depth interviews were the primary source of data collection, while ethnographic observations were used as a secondary source to supplement the information gathered through the interview process. A short socio-demographic questionnaire was also used to gather background information on the study participants. The purpose of using multiple methods in this study was to cross-validate the interview data (Morgan, 1998). Data collected from the observations was used to enhance and support the validity of the information gathered during the in-depth interviews.

Table 2. Summary of Research Methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Purpose</th>
<th>Procedure</th>
<th>Time Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-depth Interviews &amp; Socio-demographic Questionnaire</td>
<td>To gain insight into the ways community gardens can support quality of life in older adults.</td>
<td>Face-to-face interviews with 11 members of Cottonwood Community Garden, 50 years or older.</td>
<td>12 weeks</td>
</tr>
<tr>
<td></td>
<td>To understand the nature and quality of social relationships formed among older community garden members.</td>
<td>Socio-demographic questionnaire administered to 10 of 11 study participants.</td>
<td></td>
</tr>
<tr>
<td>Ethnographic Observations</td>
<td>To document the diversity of social interactions taking place within the community gardening environment.</td>
<td>Active participant observations of 4 communal gardening activities.</td>
<td>16 weeks</td>
</tr>
<tr>
<td></td>
<td>To validate interview data.</td>
<td>30 hours of non-participant observation of daily gardening activity among study participants.</td>
<td></td>
</tr>
</tbody>
</table>
3.4.1. **In-depth Interviews**

In-depth interviews were conducted with community gardeners 50 years or older in order to gain a rich understanding of the ways community gardening participation supports quality of life in older adults, explore the nature and characteristics of the social relationships, the social benefits of those relationships and the process of social engagement amongst older adults. Interviews are the most common strategy used for collecting qualitative data as they allow the researcher to gather rich and in-depth insight into the participants’ perspectives and experiences (DeCecco-Bloom & Crabtree, 2006; Hesse-Biber & Leary, 2006). Eleven semi-structured interviews were conducted with participants from Cottonwood Community Garden. These interviews were face-to-face interviews, with the exception of one interview. One participant requested the interview guide be emailed to allow her to write down her responses manually due to a medical condition preventing her from meeting face to face during the duration of the study. Her responses were included in this report because she was one of the oldest interviewees and added to the diversity of the study participants in terms of age and health status. The average interview length was approximately 45 minutes with the longest interview lasting just over one hour. The interviews took place at times and locations of the participants’ choosing. All interviews were held in Cottonwood Community Garden with the exception of one interview, which took place at a local coffee shop. Each interview was digitally audio-recorded and later transcribed verbatim for data analysis. All participants were required to give informed consent before the beginning of the interview process. An interview guide was utilized to conduct the semi-structured interviews to ensure that critical issues relating to the study’s research questions were addressed (see Appendix A). The interview guide was piloted during the first two interviews resulting in minor changes to the order of the questions and the inclusion of three additional prompts. The interview guide continued to be adapted slightly throughout the study duration to accommodate additional information not initially considered. Semi-structured interviews were used because they allowed the researcher to guide the interview while still allowing the participant to speak freely and create a naturally flowing dialogue (Hesse-Biber & Leary, 2006). Utilizing an open-ended format allowed flexibility and the emergence of new themes.
Face-to-face interviews allowed the researcher to delve into the personal experiences and perceptions of the study participants. In-depth interviews are routinely used to generate richer data than commonly found within group interviews or survey data (DeCecco-Bloom & Crabtree, 2006). Qualitative interviews require ‘active asking’ and ‘active listening’ and involve a partnership between the researcher and the researched (Hesse-Biber & Leary, 2006). Active listening requires eye contact, close observation of your participant’s body language and an understanding of both the content and context of what is being said (Dilley, 2000). When conducting qualitative interviews, it is important to develop a good rapport with the interviewee, which involves trust and respect (DeCecco-Bloom & Crabtree, 2006). In order to achieve trust it was important to conduct the interview in a place that was safe and comfortable for the interviewee. It was also important to show interest in the participant’s story and provide positive feedback or encouragement as needed. In addition, a considerable amount of time was spent visiting the garden and speaking with potential participants in an effort to develop rapport. According to DeCecco-Bloom and Crabtree, study participants are more likely to communicate their true feelings and experiences when they feel comfortable with the interviewer and “it is through the connection of many ‘truths’ that interview research contributes to our knowledge of the meaning of the human experience” (2006, p. 40).

3.4.2. Ethnographic Observations

Ethnography can be defined as “the art and science of describing and interpreting cultural behaviour from a close textual-analytic standpoint” (Jackson, Drummond & Camara, 2007, p. 24). Observations were used to help validate the interview data regarding the social interactions taking place within the community garden. This was beneficial, as it has been documented that there is sometimes a gap between what people say and what they actually do (Gobo, 2008). The goal was to gain a deeper understanding of the social milieu existing within the garden “through observation and participation in social settings that reveal reality as lived by members of those settings” (Baker, 2006, p. 173). During the observations, the researcher took on the role of both active and passive participant. In these roles, the researcher was able to
take part in the main activities of the group but did not take on the role of a full member (Baker, 2006).

After receiving the initial consent from Cottonwood Community Garden, the researcher began visiting the garden regularly over a four month period from mid-May to mid-September, 2012. Thirty hours of non-participatory observations were made at varied times throughout the morning and afternoon, during week days and weekends in an attempt to capture an accurate description of the existing social milieu. As the interviews, with one exception, were held in the garden environment, participants were asked to provide a tour of their garden plot before or after the interview, during which observations were also made. Throughout the 16-week observation period, focus was placed on older gardeners participating in the interview portion of the study but informal conversations were also occasionally held with garden members under the age of fifty years. Gardeners were made aware of the researcher’s role when an email introducing the study was sent to all Cottonwood members. In addition to the general non-participatory observations, four group activities were attended: a work party, two general meetings and the annual ‘Friends and Family Day’. During those activities, the researcher was an active participant. The garden’s work parties and general meetings take place on the last Sunday of each month. Their function is to unite garden members and tend to the communal areas of the garden, such as, the orchards, berry bushes, native garden, cultural garden, bee hives and community compost. Participation in these group activities allowed the researcher to observe social interactions not existing during day-to-day gardening practices. Fieldnotes were completed immediately after each observation period to document in detail the nature and quality of the social interactions observed among older gardeners, other garden members and the surrounding community. The fieldnotes contained empirical observations and data from informal conversations, as well as the researcher’s interpretations (Babbie & Benaquisto, 2002). During observation periods when the researcher was taking on the role of passive participant, jottings and key phrases were occasionally recorded discretely in a small notebook to jog the memory and help with the sequencing of events when preparing more detailed fieldnotes (Emerson, Fretz, & Shaw, 1995). Polit & Hungler (1987) argue, “the key to successful observational study is the quality of the data collected in logs and fieldnotes” (as cited in Baker, 2006, p. 183).
3.5. Data Analysis

All in-depth interviews were digitally audio-recorded and transcribed verbatim. Analysis began after the first interview had been completed. Each interview transcript was inductively analyzed in order to identify codes and themes. Due to the large amount of information obtained through qualitative research, coding is used to bring order and uniformity to the data. Babbie and Benaquisto define coding as “the development of concepts and categories in the recognition and ordering of themes” (2002, p. 381). Open coding, which involves breaking down the raw data into distinct parts and analyzing it for similarities and differences, was my first step to making sense of the qualitative data (Babbie & Benaquisto, 2002). In order to achieve this first step, each transcript underwent line-by-line coding. The researcher was able to check the accuracy of the interpretation of the raw data by comparing codes from multiple interviews (Charmaz, 2002). Comparative analysis is useful when something comes up during coding that cannot be easily categorized and the significance of it is unknown to the researcher (Strauss & Corbin, 1998). Focused coding was conducted to further refine the data by sorting frequently appearing and analytically interesting codes into overarching themes (Charmaz, 2002). The coding process concluded when theoretical saturation was reached and no new themes emerged from the data (Dey, 1999).

Fieldnotes from the ethnographic observations underwent a similar analytical process. Themes emerging from the observational data were compared and contrasted with the themes pulled from the interview data and used to validate the researcher’s interpretation of the social phenomenon under study. Member checking, which is a “technique that consists of continually testing with informants the researcher’s data, analytic categories, interpretations, and conclusions”, was done with six of the study participants (Krefting, 1991, p. 219). Participants were contacted to participate in this step based on their expressed interest during the interview process and their availability. Member checking provided the opportunity to confirm with the selected participants that the key codes and themes compiled from their interviews were a valid representation of their gardening experience. Memo taking was also undertaken throughout the research process and began with the initial coding. Memos are commonly used as reminders and often explain how the relationships between codes and themes were developed (Strauss
& Corbin, 1998). Memos have the dual purpose of grounding the research and maintaining the researcher’s awareness (Strauss & Corbin, 1998). Memos were utilized to document notes concerning codes and themes, emerging theoretical relationships, methodological concerns and reflexivity (Babbie & Benaquisto, 2002; Hesse-Biber & Leary, 2006; Strauss & Corbin, 1998).

3.6. Trustworthiness

The trustworthiness of qualitative research is commonly called into question because of its incompatibility with the quantitative concepts of validity and reliability (Shenton, 2004). However, trustworthiness in qualitative research can be tested by the credibility, transferability, dependability and confirmability of the research design (Jackson, Drummond & Camara, 2007; Lincoln & Guba, 1985).

Credibility- The concept of credibility is considered by Lincoln and Guba (1985) as critically important to establishing trustworthiness and is the qualitative equivalent to internal validity, ensuring the study measures what it intends to (as cited in Shenton, 2004). In order to achieve credibility in this study, a number of techniques were utilized. First, familiarity with the participating organization (Shenton, 2004) was achieved by meeting with a key informant from the garden for a guided tour and receiving an explanation of the garden’s organizational policies prior to data collection to ensure an understanding of the participants and the garden site. Second, triangulation was achieved by using different sources and multiple methods (Lincoln & Guba, 1985). Multiple interviews were conducted with members of Cottonwood Community Garden combined with multiple observations. The use of various methods compensates for their individual shortfalls. For example, observational data helped confirm what was being said during the interview process was representative of actual events. Engagement of multiple interviewees provide different perspectives and attitudes on the research topic (Shenton, 2004). Third, frequent debriefing sessions took place with the researcher’s senior supervisor throughout the study process to uncover and correct potential flaws in the research design (Shenton, 2004). Finally, reflective memos were documented throughout the study in an attempt to reduce bias and maintain subjectivity (Shenton, 2004).
Transferability- External validity is used to ensure that research findings are applicable to other situations; however, due to the nature of qualitative research and its use of relatively small sample sizes, it is often impossible to demonstrate external validity (Shenton, 2004). Providing thick descriptions of the phenomenon under study is one way to ensure transferability, which is the qualitative equivalent (Lincoln & Guba, 1985). Detailed information regarding the organization participating in the study, diversity of the sample, number of individuals included, the process of data collection, and the time frame of data collection are included in this document to allow readers to make comparisons with similar studies or situations (Shenton, 2004).

Dependability- Dependability is concerned with reliability or the ability to replicate a study’s findings by employing similar measurements (Lincoln & Guba, 1985; Shenton, 2004). Two techniques were utilized to ensure the dependability of the study. First, ‘overlapping methods’ were used, which is similar to triangulation (Lincoln & Guba, 1985). The second is providing a detailed audit trail. In order to achieve dependability, all raw data can be made viewable including the researcher’s memos. This practice will allow readers to verify the accuracy of the findings (Lincoln & Guba, 1985).

Confirmability- Confirmability is concerned with ensuring the study findings are representative of the participants’ experiences and not based solely on the views of the researcher (Shenton, 2004). In order to establish confirmability -- triangulation, reflective memos and a detailed audit trail were kept (Lincoln & Guba, 1985; Shenton, 2004). The use of these techniques confirm that the study results are grounded in the data. In addition, member checking was completed with six study participants to confirm that the researcher’s interpretation of their interviews was representative of their community gardening experience. This process allowed the participants to provide additional information and expand on their initial responses. No significant misinterpretations of the data were uncovered.
4. Findings

This chapter presents the study findings in two sections: a) descriptive findings on the study participants’ assessment of accessibility in Cottonwood Community Garden and their design recommendations, and b) substantive themes based on inductive analysis of the study participants’ in-depth interviews and the ethnographic observations made within Cottonwood Garden. All names of study participants in this report are pseudonyms, which are used to maintain confidentiality.

4.1. Accessibility in the Garden

When asked if there were any features of the garden the participants would change to improve accessibility, the majority of them reported being overwhelmingly satisfied with the present garden environment. Some of the participants felt there was no need to make further changes to the built environment as they believed Cottonwood was as accessible as it needed to be, and at the current time, there was no demand for greater accessibility. One gardener, James, felt the accessible expansion was unnecessary due to what he believed was a limited demand for raised gardening plots stating, “they’re largely a gesture to accessibility…they haven’t been necessary because largely people are capable of, you know, the people we get are capable of gardening in the ground in normal plots”. While another gardener, Grace, was proud of the garden’s accessibility exclaiming, “…I’m pretty impressed with the accessibility of this garden, I’m pretty in love with this garden”. However, some participants did voice concern over the existence of environmental barriers and provided design recommendations to improve the functionality of the garden as a whole. The most common barrier reported by the study participants was the lack of an accessible primary access path connecting the expansion with the original section of the garden. They recommended the development of at least one hard surfaced pathway running the full length of the garden. Grace, who suffers from a neurological condition impacting her balance, spoke about the significant
difference between the stability of the crushed stone walkways in the expansion compared with the bark mulch in the older section stating, “…I realize that it is harder to walk on the wood chips because it’s just spongier”. Another gardener, Gwen, mentioned that she even found the crushed stone pathways to be difficult to manoeuvre, noting, “…you slip and slide in that gravel”. She recommended inclusion of paved paths throughout the garden with railings in some sections for older adults to rest against.

Improving mobility was the gardeners’ biggest concern. Providing one main accessible pathway running through both sections of the garden would appear to greatly improve the overall accessibility of Cottonwood Community Garden and help connect the expansion with the older section. Two gardeners with plots in the original section of the garden, Dave and Ryan, discussed how they felt distanced from the expansion area as Ryan explained, “…you are in a different zone, it’s like a different country”. Similarly, Dave noted:

...I think it’s kind of maybe human nature like when you’re gardening as far as you can kind of see people around you, you recognize them, you say hi, but you know if you don’t then there’s a hedge and you don’t see them well you don’t even know if they’re there so yeah for that reason the visual separation just seems to have socially separated the extension from here.

Although it would be difficult to have a walkway wide enough to allow a turning radius for wheelchair users in some sections of the original garden, a narrower hard packed pathway would likely be sufficient providing there are designated spots wide enough to provide adequate surface space for turning. Debby explained the difficulty of making changes to an existing space when providing her design recommendations for improving the accessibility of the original section of the garden:

...you could run accessible paths and raise taps and put in more taps that would be very important but you know it took two years of struggle to get that one (referring to the accessible expansion) so I mean I think it would be quite the amazing struggle to do that. I mean it may happen but of course it is much more work, it’s much more work to do it afterwards. Anything about accessibility is more work afterwards; the same is true of housing.

Future plans to build a wheelchair accessible tool shed and a fully accessible meeting area in the expansion were also discussed. Other recommendations in regards to
improving the garden’s accessibility were – inclusion of visual markers in the garden to assist persons with visual difficulty and improved lighting inside of the tool shed. Dave and Ryan both felt there should be more curb cuts on the roads running along the parameter of the garden. As cyclists, they noticed there was only one lowered curb allowing access to the park from the roads within close proximity to the garden, providing a barrier for persons in wheelchairs or using walkers.

Study participants were also asked if there was anything they would change about the layout of the garden to increase the opportunity to interact with other garden members. Overall, the participants reported being satisfied with the garden’s layout and unique design. Although, improving the garden’s meeting area was discussed by four of the participants. Currently, the garden’s general meetings are held under a large tree in a central area of the older section (as seen in Figure 10). Dave and Ryan felt this location was not ideal for communicating with others as the seating was scattered randomly and there was significant background noise from the warehouses directly behind the meeting spot. Ryan, who only has hearing in one of his ears, found it particularly difficult to participate in the meetings due to the background noise, which may be a problem for other older adults. They both noted that there was a plan to move the meeting area to the expansion and they hoped a small circular amphitheatre would be developed to improve functionality of the space and facilitate conversation. Darlene also felt an improved meeting space could increase the opportunity to interact with fellow gardeners and suggested creating one with some kind of shelter to make meetings in the fall and winter months more bearable stating, “...often they are held in times of year where we just can’t stand around in the cold and wet”. Other recommendations for increasing social interaction included offering more community workshops, increasing the number of socials and introducing a ‘Welcome Committee’ and/or ‘Sunshine Committee’. Some participants felt the garden members could put more effort into organizing formal activities or committees that would increase the number of social gatherings.
Table 3. Summary of Gardeners’ Design Recommendations

<table>
<thead>
<tr>
<th>Improve Accessibility</th>
<th>Increase Social Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create at least one accessible pathway running the entire length of the garden.</td>
<td>Connect the expansion with the original section of the garden by developing an accessible primary access path.</td>
</tr>
<tr>
<td>Pave pathways.</td>
<td>Arrange seating in meeting area to better facilitate conversations.</td>
</tr>
<tr>
<td>Provide handrails in sections of the garden.</td>
<td>Change location of meetings to reduce background noise from nearby warehouses.</td>
</tr>
<tr>
<td>Add visual markers on walking paths and water taps.</td>
<td>Provide a meeting area with some form of shelter from the elements.</td>
</tr>
<tr>
<td>Increase height and number of water taps in original section of the garden.</td>
<td>Continue to increase the size of the garden to include more people.</td>
</tr>
<tr>
<td>Increase size of tool shed.</td>
<td>Increase number of community workshops and social activities.</td>
</tr>
<tr>
<td>Improve lighting in tool shed.</td>
<td>Organize a Welcome Committee to orient and introduce new gardeners.</td>
</tr>
<tr>
<td>Provide access to adaptive gardening tools. Example: easy grip handles, lighter hoses.</td>
<td>Organize a Sunshine Committee to acknowledge significant events in gardeners’ lives.</td>
</tr>
<tr>
<td>Build wheelchair accessible tool shed and meeting area in close proximity of expansion.</td>
<td></td>
</tr>
<tr>
<td>Increase number of curb cuts connecting garden to surrounding roads.</td>
<td></td>
</tr>
</tbody>
</table>

Substantive Themes

First, the themes and constituting codes that emerged from analysis of the interview transcripts will be discussed, followed by a description of the findings based on the researcher’s fieldnotes. The themes that emerged from the interviews will be compared and contrasted with the observational findings at the end of this chapter. The following five themes will be discussed in detail: maintenance of overall well-being; engaging in a meaningful pastime; social engagement; “staying invested in the garden as I age”; and gardening in East Vancouver. The main codes within each theme will also be discussed. The study findings are intended to provide insights into the physical, psychological and social benefits associated with community gardening and how these benefits may impact quality of life in older adults. The significance of the social
interactions in the garden and the specific importance of gardening in the lives of older adults are also discussed.

Table 4. Main Themes and Corresponding Codes: Benefits of Community Gardening Participation

<table>
<thead>
<tr>
<th>Themes</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAINTENANCE OF OVERALL WELL-BEING</td>
<td>Eating Right</td>
</tr>
<tr>
<td></td>
<td>Staying Active</td>
</tr>
<tr>
<td></td>
<td>Mental Restoration</td>
</tr>
<tr>
<td></td>
<td>Connecting with Nature</td>
</tr>
<tr>
<td>ENGAGING IN A MEANINGFUL PASTIME</td>
<td>Investing Time</td>
</tr>
<tr>
<td></td>
<td>Real Work</td>
</tr>
<tr>
<td>SOCIAL ENGAGEMENT</td>
<td>Quality of Social Relationships</td>
</tr>
<tr>
<td></td>
<td>Making Intergenerational Connections</td>
</tr>
<tr>
<td></td>
<td>Creating a Sense of Community</td>
</tr>
<tr>
<td></td>
<td>Resolving Conflicts</td>
</tr>
<tr>
<td>“STAYING INVESTED IN THE GARDEN AS I AGE”</td>
<td>Continual Learning Process</td>
</tr>
<tr>
<td></td>
<td>Supportive Environment</td>
</tr>
<tr>
<td></td>
<td>Awareness of Limitations</td>
</tr>
<tr>
<td>GARDENING IN EAST VANCOUVER</td>
<td>Engaging the Community</td>
</tr>
<tr>
<td></td>
<td>Rejuvenating the Neighbourhood</td>
</tr>
<tr>
<td></td>
<td>Problems with the Public</td>
</tr>
</tbody>
</table>

4.2. Maintenance of Overall Well-being

The first theme, *maintenance of overall well-being*, is comprised of four main codes: “eating right”, “staying active”, “mental restoration”, and “connecting with nature”. Existing research shows that gardening participation in later life is associated with both
physical and psychological health benefits (Chen & Janke, 2011; Infantino, 2005; Van Den Berg & Custers, 2011). Garden members participating in this study reported similar benefits to their physical health and mental well-being. During the interviews, study participants were asked what they enjoyed most about gardening, what motivated them to become a community garden member and what incentive they had to remain a community garden member in the future. Responses to those questions highlighted the participants’ desire to maintain their health and overall well-being through healthy eating habits, physical activity, stress reduction and spending time in nature. This section will outline the physical and psychological benefits received from participants’ gardening participation and will allow us to gain a deeper understanding of how community gardening participation contributes to the older gardeners’ quality of life.

4.2.1. Eating Right

When asked why they made the decision to become a community garden member, the majority of study participants stated growing food was their primary motivation. Having the space to grow their own food was extremely important to the participants who felt the availability of fresh organic and locally grown produce was strongly related to their quality of life. Many participants stated they did not have adequate space available in their private homes to garden giving them incentive to look for a plot of land in a communal setting. Gwen, a gardener in her late seventies observed, “We are eating what we are growing, which to me is very important”. Community gardening participation results in tangible rewards, which were highly valued by the study participants. Several participants spoke about how their diets had improved after becoming a community garden member through a substantial increase in their fruit and vegetable intake. Several gardeners interviewed claimed that they incorporated produce from the garden into their diets on a daily basis, and in the spring and summer they rarely needed to purchase vegetables from a grocery store.

Being self-reliant and being able to grow the majority of their own vegetables during the spring and summer also equated to significant financial savings for some gardeners. Sandra believed that in spring and summer, she was taking home upwards of $100 worth of produce a month from her garden plot and stated, “it’s worth $600 to me that plot, so $20 is a good investment” referring to the small annual fee required to
tend her plot. Another gardener, Grace also found gardening to be financially beneficial due to her “limited budget”. The majority of participants interviewed believed community gardening enabled them to maintain a healthier diet increasing their fruit and vegetable intake, while lowering their annual food budget. Sandra, who lived with a friend not belonging to the community garden, discussed how her housemate also positively benefited from the healthy produce she would regularly take home from the garden and incorporate into their nightly meal explaining, “it will fill the fridge and that’s what we will eat all week”.

The quality of the produce the participants were able to grow themselves seemed to be very important to them and their beliefs in regards to maintaining a healthy lifestyle. Some participants were vegetarians and explained that having access to what they called “good” vegetables was crucial to their happiness. Many gardeners believed they were able to personally grow higher quality vegetables than what they could buy from the local grocery store. A genuine love and passion for growing high quality produce locally and sustainably was visibly evident. Sustainable gardening depends on renewable resources and is concerned with reducing environmental waste and conserving water and energy (Stonebrook, 2011). Participants used chemical-free methods to grow organic produce, solar energy and repurposed materials such as, composted soil and recycled building supplies. When asked what he enjoyed most about gardening, James a male gardener in his sixties stated, “It’s hard to know I mean I enjoy picking stuff in the garden and taking it home and having that fresh taste you know it’s hard to beat. A lot of things taste a hell of a lot better...”. James believed eating what he had picked from the garden earlier in the day provided him with fresher better tasting vegetables than could be purchased at the store. Similarly, when comparing her produce to that at the local market, Sandra stated:

…the quality of the vegetables you get in the stores, sure some of them are pretty disgusting...I’m not going to go to the store to buy lettuce when I have lettuce over here and my lettuce is better, it tastes better, it’s better, it’s better, it’s better!

The same gardener proudly displayed a photograph on her smart phone of the gourmet salad she prepared for her dinner the night before using only ingredients from the garden exclaiming, “you go to the fanciest hotel and you don’t have salads like these”!
Overall, the majority of participants felt their ability to produce healthy food positively impacted their physical health and well-being, and that was the main reason why they joined the garden. Only one participant, Leah felt the produce was not important to her community gardening participation stating, “I spend time in the project with my [adult] son, time we would not otherwise spend together. The food is incidental and some years the harvest is very poor”. These findings suggest that the older community gardeners are concerned with the quality of produce they consume and make a conscious effort to incorporate sustainably grown organic fruits and vegetables into their daily diets to improve their eating habits and have a positive impact on the natural environment.

4.2.2. Staying Active

During the interview process, several study participants referred to gardening as being “good” for their health and discussed its positive impact on their physical well-being when describing what they enjoyed most about gardening and what motivated them to continue to garden. One of the most common benefits mentioned in relation to physical health was the ability of the garden to keep participants active and busy. Participants felt there was always some task that needed their attention or some produce that needed to be harvested, which gave them a reason to get out of the house and go outdoors. Therefore, it seems maintaining a garden plot helps motivate older community gardeners to go outdoors and engage in physical activity. James, a male gardener likened his garden plot to caring for a pet, “you got to treat it, you know take care of it”. One participant, Sandra stated:

if I was at home I would probably be watching public television and I would probably nod off and I would feel terrible. Where as I come down here and do something and I’m not snacking, I’m not resting during the day and I get a better sleep at night, you know it’s very, very healthy.

James made a similar statement when asked what he found most positive about his community gardening experience, “well umm getting out, getting up off the couch or out from in front of the TV and coming out and doing stuff...”. Darlene, a gardener also in her sixties, confessed that she just recently started to truly value the physical benefits of gardening; “you know I never quite realized until I started getting older that it is good
exercise”. The majority of the gardeners interviewed agreed that, for them, gardening was challenging and hard physical work. A male gardener in his fifties, Dave noted, “it’s actually a lot of work digging and pulling and carrying”. The large amount of common or shared space in this specific community garden meant there was always work to be done outside the gardeners’ individual plots. This provided the opportunity to invest a significant amount of time and work into caring for the garden. It was expressed throughout the interviews that the majority of older gardeners welcomed this added responsibility.

The study participants all rated their overall health positively within the Socio-Demographic Questionnaire filled out prior to their interviews. However some of the older adults noted having at least one health condition, which made gardening physically challenging. For these participants, some of the physical movements common to gardening activity, such as, bending and gripping tools had begun to pose some difficulty. One participant, Grace claimed gardening was sometimes too physical and she found that she occasionally pushed herself too hard and spent too much time standing on her feet, which she believed was not good for her specific health condition. She went on to state that she did not feel she got “beneficial” physical exercise from gardening, although she does believe there are many other health benefits associated with the activity. In contrast, another gardener Betty, felt the physical activity gained from gardening had specific health benefits like “lowering [her] blood pressure and keeping [her] agile”. Although, the gardeners’ perception of how gardening impacted their physical well-being was overwhelmingly positive there were some aspects of gardening that could be physically challenging and in some cases detrimental depending on the participants’ health condition. However, in many cases these challenges can be limited or countered with the use of environmental adaptations. Overall, the majority of gardeners participating in this study felt gardening was an important part of a healthy and active lifestyle. When 78-year old garden member Gwen was asked if she felt gardening would have more or less importance to her as she aged, she replied, “it will have more because it will motivate me to get going…it’s healthy, it is so healthy cause you’re outside and you’re active”.

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4.2.3. Mental Restoration

The topic of “mental restoration” was discussed by a few participants during the interview process. When explaining why they gardened and what kept them motivated to continue community gardening, these participants often mentioned relaxation, stress reduction and escape from city life as issues related to gardening enjoyment and improved mental well-being. These aspects seemed to be more important to specific participants, which may have some relation to the degree of stress in their daily lives outside of the gardening environment. One gardener, Betty explained how she was drawn to gardening in later life partially as an escape from her high stress job and described how valuable the experience of gardening was when she desperately needed a distraction. She reflected, “I had a high stress job for many years and I needed some kind of therapy, I needed some kind of break or something in my life that took me completely away from what I had been doing”. Another gardener, Gwen, also felt the garden was effective in reducing her stress stating, “I come here and it’s just so relaxing...when I come here everything is blank except for gardening”. Others felt similarly about using the garden as a sort of escape from urban living and life stressors, suggesting that gardening is a therapeutic activity for many older adults.

When asked how gardening impacted her mental health, one participant, Darlene, stated that she drew pleasure from the colors and textures of the garden and found the sounds, fragrances and beauty of the environment to be calming. When asked the same question, Grace mentioned how gardening helped her focus on the positives in life, work through her frustrations and have hope for the next gardening season. Other participants highlighted the fact that gardening allowed them the opportunity to slow down and appreciate the beauty that surrounded them on a daily basis. Ryan, a gardener in his fifties, described gardening in the following way, “it’s contact, it’s tactile, it’s contact with the earth, it just really gives you pause like you stop and you’re feeling things, you’re smelling things, which is wonderful it’s a really reactive thing for me”. He also stated that he strongly believed gardening was very beneficial to his mental well-being explaining that the experience of gardening was very close to “joyful”, which he thought was an emotion rarely found in his daily life. Another study
participant, Dave, also found gardening had a profound positive impact on this mental well-being reflecting:

I find coming to the garden I still do not think there has been a time no matter how rainy, cold whatever that I haven’t been here for awhile and then when I leave inevitably no matter what it’s been like I just feel awe well I’m more relaxed than when I came or I’m just mellowed out, I’m happy it just always puts me in a good mood and I don’t always arrive in the most, you know your mind is rah, rah, rah working away on things, problems, challenges and it’s just incredibly relaxing.

Previous research has found natural environments to be mentally restorative and stress reducing, and the experiences of these study participants support these existing findings (Berman et al., 2008; Jansen & Von Sadovszky, 2004; Van Den Berg & Custers, 2011).

4.2.4. Connecting with Nature

The importance of connecting with nature and the relative impact this connection had on the garden members participating in this study was profoundly positive for all involved. It became evident throughout the study that spending time outdoors and being in nature was as important to the participants’ well-being as the valuable produce they were cultivating. As discussed in the above section on “mental restoration”, the impact of connecting with the natural world seemed to be strongly associated with the gardeners’ overall well-being, particularly their mental health due to the therapeutic properties found in nature. The gardeners described the importance of their relation with nature and how it impacted their gardening experience in a variety of ways. Darlene pointed out the pleasurable experience of watching the garden develop and change with the seasons:

...seeing the garden mature and grow and just seeing it on a beautiful day like today and even during the winter just going down and when there is snow on it and different seasons all through the year and just how beautiful it is. I really enjoy that.

Another gardener, James also mentioned his connection with the garden and the satisfaction he got from watching it mature, “I’ve been here so long that I have watched you know the fruit trees kind of be planted and come up and fruit every year and get bigger, the space changes”. Similarly, Gwen enjoyed watching the miracle of plant
growth proclaiming that what she enjoyed the most was “...the dirt, you get your hands dirty and see things grow. That to me is a miracle when you put a seed in the ground and it grows...”. The innate pleasure the participants got from getting their hands dirty seemed to be universal amongst the participants. When asked what Grace enjoyed most about gardening she responded by saying “...just being in nature, having a green space, digging in the dirt”. The hands-on experience of gardening and the closeness gardeners got with the earth seemed to bond them with the natural world in a unique way that kept them in-tune with the changing seasons and passing of time. Having continued access to a natural environment within the city of Vancouver, like the community garden that afforded an opportunity to interact directly with nature was very important to the participants, many of whom would not otherwise have access to this type of outdoor space.

The act of gardening and successfully cultivating a living organism requires an understanding of the natural processes that support plant life and it seemed apparent that this understanding was meaningful to the gardeners and something they strived to enhance through hands-on experience. Betty described gardening as “communing with nature” and explained how the experience of gardening involved “understanding really deep processes that we live with without mostly acknowledging”. She also likened gardening to theatre, explaining:

...you’re like a stage manager you set things up and you know you read the books by landscape artists and things it’s like a moving theatre piece, you set things in motion you put seeds in the ground it's a very dynamic activity but at the same time it’s very contemplative because you have to pay attention and they can’t talk back. Plants don’t speak so you have to learn to understand how they grow, what they need in order to make them thrive so that can be very deeply frustrating, you know lots of times plants die they don’t grow it is a lot of hard work a lot of pruning and digging and moving. It’s a very involving and passionate activity.

Another gardener, Sandra, felt so strongly about the experience of gardening she stated that it “should be a human right to have a garden”. One commonality amongst all the participants was their love of the garden and the enjoyment it gave them. The aesthetic beauty of the garden was an important part of the gardeners’ experience and came up many times throughout the study. Participants used words such as, “oasis” and “paradise” to describe the garden and why they enjoyed spending time there. Debby
and Gwen spoke about the pleasurable experience of being close to the wildlife present in the garden as Gwen noted, “it’s like being on an island cause the butterflies and the bees and the little birds, it’s just something else”. The majority of the study participants clearly believed spending time immersed in the natural environment provided by the community garden had significant impacts on their quality of life resulting in increased relaxation, stress reduction, mental restoration, and needed escape from urban living. Access to nature is especially important for urban dwelling individuals, many of whom do not have the luxury of private backyards. Some theorists believe an inability to connect with nature contributes to social isolation and loneliness, as humans “rely intellectually, emotionally, physically, and spiritually on [their] affiliation with nature” (Kingsley & Townsend, 2006, p. 527).

### 4.3. Engaging in a Meaningful Pastime

Successful aging has been associated with regular involvement in leisure time activity (Ashe et al., 2009; Everard et al., 2000). Gardening was an activity that the study participants were invested in providing them with meaningful and engaging occupation. The theme *engaging in a meaningful pastime* is comprised of two main codes: “investing time” and “real work”. The first code, “investing time”, discusses how gardening has become a major part of the participants’ lives and how the older gardeners have taken on leadership roles in the garden. The second code, “real work”, discusses how the gardeners found their community gardening experience to be rewarding and satisfying work, while providing them with a form of self-expression. This theme provides a better understanding of the importance of *meaningful occupation* for the older adults’ quality of life and helps explain why gardening fulfills this need for many individuals. This theme is significant because it encompasses many of the components of ‘well-being’. According to Furnass (1996), well-being can be defined as “satisfactory human relationships; meaningful occupation; and opportunities for contact with nature, creative expression, and making a positive contribution to human society” (as cited in Kingsley, Townsend, & Henderson-Wilson, 2009, p. 207-208).
4.3.1. **Investing Time**

The older adults interviewed in this study were all active members of Cottonwood Community Garden. The majority of the participants were psychologically and emotionally invested in the garden and spent a considerable amount of time there. On average, the study participants reported visiting the community garden two to three times a week during the fall, spring, and summer. The frequency of visits to the garden ranged from one participant visiting as little as once per week to two participants regularly visiting up to four times a week. Generally, the study participants would spend between two and four hours in the garden during an average visit. Most of them considered community gardening a year-long commitment and would visit the garden at least once per week during the winter months or at minimum attend work parties once per month. Two participants had been garden members for over five years; two more for over ten and one participant had been a member for eighteen years. The gardeners with the longest history in the garden seemed to be the most involved in the gardens’ operations and committed the most time to caring for the garden’s common spaces, although all participants volunteered their free time in some way to the general maintenance of the garden. Overall, the older garden members were very devoted to the garden and committed to its continued success feeling a sense of ownership over the space.

Participants stated that they felt like valued members of the garden when asked if they thought older gardeners played important roles in the garden community. Some participants felt older adults took on many of the leadership roles in the garden and were harder workers, which they partially attributed to older adults having more available time when compared to younger gardeners. Several participants explained that they were at a stage in their lives where they could commit a considerable amount of time to gardening making it more enjoyable. One gardener, James explained, “…most of the active gardeners are older, young people don’t seem to have the time, which is understandable”. Darlene discussed the garden’s current work distribution in the following excerpt:

…I guess it’s just that way in a lot of organizations that there is five or six people that do a lot of the work and in our garden now it seems to be
more of the older retired but it hasn't always been that way...it's probably people who are maybe in their forties, late thirties or getting up in their fifties and sixties that tend to do more work...and it just makes sense I mean people who are in their twenties and thirties they just can’t, you know so many demands on their time...

Ryan and Dave, two gardeners in their fifties, felt garden members over sixty were on the whole the ones in charge of the garden stating, “they’re the kind of leaders of the whole operation”. Dave also explained, “...people have been around long enough that they have figured everything out and well they’re the older people and they know it, so you rely on them...”. Many of the older participants felt they were valued for their gardening experience and knowledge of the garden’s history. In contrast, Grace didn’t feel she could necessarily be considered a valuable gardening resource, but felt like a valued group member because of her general life experience.

Due to the community garden’s acres of communal space, maintenance of the garden required members to volunteer to spend time working outside of their individual plot. Each member worked on at least one ongoing task throughout the year with some gardeners taking on several different volunteer positions. If a gardener was unable to fulfill their work commitment due to a health reason or conflicting work schedule, they could ask to be exempt. Debby, who was active in the garden’s operations, explained, “all of the people who are currently exempt from work commitments due to health reasons are not older, they’re younger”. According to the study participants, the older garden members fulfilled their work commitments and commonly sat on a variety of committees and/or were active board members volunteering for the garden’s non-profit organization. When asked how they contributed to the garden many participants had long lists of tasks they regularly completed both formally and informally. Three of the participants, James, Darlene and Betty, all gardeners in their sixties, were largely responsible for developing and maintaining the large native plant garden. James explained how Darlene, Betty and himself propagated up to 40% of the plants in the garden stating, “…all the native garden down along the track...we propagated most of the shoots from plants taken on field trips...”. Their volunteer work alone had significantly transformed a large amount of the garden’s common space. The three friends also volunteered in other areas of the garden, they helped to organize the garden’s annual “Friends and Family Day” and ran a variety of gardening workshops
throughout the year. Debby was also heavily involved with the garden, helping with the administration, fundraising, project management, media work and putting together grant proposals. She discussed how she recently had to recruit twelve individuals to help take over some of her work in the garden and was putting in upwards of thirty hours a week in volunteer time. Like these individuals, the majority of the remaining study participants were also very invested in running and maintaining the garden establishing that older gardeners were valuable group members. Throughout the study, it was evident that the participants recognized their own contributions to the well-being of the garden as well as the contributions of their fellow members. Overall, older gardeners perceived that they were valued for their good work ethic, ability to invest a large amount of time, gardening knowledge, life experience and historical reference. Despite the acknowledgement that older members were often the most involved in garden maintenance, the participants made it clear that they valued the contributions of younger members and understood the many restrictions on their time.

Study participants felt like they were actively involved in the operations of the garden or had the opportunity to be involved if desired and were able to freely express their opinions in regards to garden business. Despite feeling included in the decision making process, some participants expressed frustration when the majority of garden members would decide to take the garden in a direction that they did not approve of. One member, Darlene, spoke about how she had written many “do or die letters” to the other garden members in order for her voice to be heard. For example, she was very passionate about making sure the garden remained an open and friendly place for the public to visit and felt some newer gardeners didn’t realize that the garden was an open public space. She felt compelled to write a letter and had it laminated and posted on the garden’s information kiosk. Her letters reflected her high level of commitment to protect the integrity of the garden. Similarly, many older gardeners expressed a need to protect the garden as they shared a vested interest in its continuation. James summed up the contributions made by older garden members stating, “…largely the garden exists on the time and effort of the older people in the garden”.
4.3.2. **Real Work**

Some of the study participants discussed that they believed community gardening participation provided them with a meaningful and engaging pastime, which they considered “real work”. When speaking about working in the garden participants described their experience as “rewarding”, “satisfying” and “challenging”. Betty explained, “everybody I think needs real work, you need meaningful work…the actual act of gardening of planting and growing plants is the most rewarding and fundamental experience”. A second gardener, Darlene, stated, “…it’s satisfying to get produce out of the garden, it’s satisfying to see flowers bloom”. The participants frequently expressed a sense of pride and accomplishment in regards to the work they completed in the garden and over the success of their individual plots. They were rewarded for the time they devoted to the garden’s care by witnessing the garden thrive and be fruitful, although when plants did not thrive, disappointment and frustration were also expressed. James, a member of the community garden for almost two decades, expressed his satisfaction for watching the garden grow and develop in part from the efforts of his time spent propagating it over the course of several years. When asked about the most positive aspects of his community gardening experience, James shared:

> …developing the native garden from cuttings, developing a lot of this garden from cuttings so umm you know I think I’m probably unique because I’m different from a lot of the gardeners because I have been here so long and had my hands on so much of the garden…

Some of the older gardeners interviewed had spent many years as garden members and have had a significant role in shaping the garden into its present form.

The participants’ answers to the question of why older adults are drawn to gardening suggests gardening may be a common activity among older adults because they are often retired and looking for something to fill their time that is not only pleasurable but also meaningful. Gardening seems to provide both because it challenges people physically and mentally, while benefiting their overall health and the environment. Also, as people age, they tend to continue to participate in leisure activities they are familiar with from their past and many older adults have gardened at some point in their lives (Agahi, Ahacic & Parker, 2006). Many of the gardeners
participating in this study had a long history of gardening instilled in them by their parents, while a small number had picked up gardening later in life. Betty shared a theory as to why she thought older adults were particularly drawn to gardening, explaining:

...first of all you have the time and you are not interested in superficial things anymore, you know [life is] too superficial you want some kind of activity that is deeply satisfying and passionate and understanding how nature works, you know begins to fulfill that. You don't want to fool around anymore; you want to do something that gives you something substantial back.

When asked what enticed them to continue community gardening some participants discussed how gardening kept them actively engaged. Dave stated:

...I know something magical is happening when I come to the garden and I forget the time, like I have no idea, has it been an hour or have I been here three hours? Like you forget time and that to me, that’s proof that whatever you’re doing you are engaged, you’re absorbed and you’re probably at your happiest because you’re just so busy doing what you’re doing...

Ryan shared similar thoughts explaining, “It’s the ideal thing for seniors, well not all seniors, you have to have the innate interest but if you got it it’s wonderful. It keeps you engaged and coming out in the community”. Community gardening involves the senses, it stimulates individuals both physically and mentally, it has a social component, provides tangible rewards and allows older adults to have a hand in building something that strengthens their community and reduces environmental waste through organic gardening and composting. Both Ryan and Dave felt part of the satisfaction they received from their gardening experience was related to the positive impact they perceived they were having on the natural environment. Ryan stated:

...Dave and I are really serious environmentally as far as carbon dioxide emissions go, so it’s just you know, it’s not significant but it’s a reduction in purchasing food either from the valley that’s shipped in or worse from California or worse from South Africa, so that gives us a real sense of accomplishment and fulfillment.

Study participants also found community gardening participation provided them with a form of self-expression and challenged them creatively. Like many younger
adults, older adults have a desire to express their personality in a way that is meaningful to them. For some participants, gardening provided the opportunity to challenge themselves intellectually and artistically through the planning and landscaping of their plots. One garden member, Betty, spoke about the enjoyment she received from the thought processes involved in planning a garden plot stating, “...I enjoy the landscaping, the planning of the plots, the planning of what kinds of things you want to grow. When you grow perennials and shrubs, you know, using companion plants to make a landscape, for me it fulfills...”. Five of the study participants specifically spoke about being creatively inspired by the garden and the activities of other garden members. Grace discussed how inspiring it was to walk through the garden and look around at what other members were doing in their plots. She explained how she set a goal for herself this garden season to weave her own trellises and proudly pointed them out during her interview. Darlene also found inspiration from other gardeners stating:

It was really fun actually when the expansion, when all those new gardeners all at once were creating their plots and just seeing how they built them it was really neat...seeing new gardeners getting excited about it especially when people find something in the garden they really like and they get hooked on. I find it really fun, I like that.

Debby discussed how the large amount of communal space available in the garden increased the opportunity for garden members to be creative as people had begun to take responsibility over different areas stating, “there is room to be very creative, you know, so the person who takes care of the bees he got the idea, he got the bees and he has built all kinds of beautiful structures”. It was clear that the physical environment of the garden allowed members the opportunity to try new things and explore where their true passions lie providing an intellectual challenge, engaging gardeners and keeping their interest in gardening. One gardener, Sandra, described gardening as being “part of [her] core identity”. Other participants also expressed the important role gardening had in their lives. Six of the participants reported community gardening as one of the most important activities in their life at the present time. It was apparent that having the opportunity to express themselves through their gardening efforts positively impacted the quality of life of many of the older gardeners interviewed.
4.4. Social Engagement

Remaining socially active and engaged in one’s community is important to maintaining a high quality of life for many older adults. As many older adults living in urban areas of British Columbia are vulnerable to social isolation and civic exclusion, it is important to understand the social benefits related to community gardening participation (Ministry of Health Services, 2004). The theme social engagement consists of four overarching codes: “quality of social relationships”, “making intergenerational connections”, “creating a sense of community” and “resolving conflicts”. The first code, “quality of social relationships”, takes a closer look at the types of social interaction taking place in the community garden and how meaningful these relations are to the garden members. The code “making intergenerational connections” discusses the importance of socially interacting with younger adults and the potential for these connections to be formed in the community garden environment. The third code, “creating a sense of community”, was formed from the codes “cooperation”, “common bonds”, “sharing of resources” and “social capital”, which were frequently discussed by the participants. The fourth code, “resolving conflicts”, discusses the challenges of belonging to a group and how the community gardeners work through personal conflicts and differences in opinion.

4.4.1. Quality of Social Relationships

The participants of this study reported that belonging to a community garden increased their opportunity to socially interact with others. However, the extent of social interaction experienced and the significance of those interactions varied among participants. When asked how many people they would socially interact with during an average visit to the garden, the participants’ answers varied, some reported interacting with as little as one or two other individuals, while others would generally interact with five or six. The type of social interaction also varied ranging from the exchange of simple greetings to twenty-minute conversations delving into personal histories. Despite the variation, it was made evident that community gardening participation involved a strong social component. Although, the desire to meet new people and/or increase their
social network was not reported as the main reason for joining the community garden by any of the study participants, all participants discussed benefitting to some extent from the social relations taking place in the garden. When discussing the social aspects of her community gardening experience, 78-year old Gwen noted, “it’s allowed me to meet new people, interesting people…it’s very social, very social”. Gwen also discussed how community gardening had helped her overcome feelings of social isolation stating:

Well I think it is companionship when you’re here and you aren’t alone, I mean you come here for two or three hours and you know you are going back to your condo and you’re going to be alone again but being here you are with people and I think it is a real benefit to participate and that’s why I come.

A second participant, Betty, spoke about how she did not join the garden with the intent or desire to meet new people, but over time, her involvement with the garden provided her the opportunity to make some meaningful friendships that had positively impacted her quality of life stating, “I have found new relationships that I really treasure”. Several others reported a similar experience having developed friendships in the garden over time without intentionally looking to expand their social networks.

Study participants were asked during the interview if they had formed close friendships with other garden members. The majority of participants reported making friends in the garden, with four of the participants developing close friendships that involved socially interacting outside of the garden environment. The participants who developed a close friendship with at least one fellow community gardener openly expressed the importance and meaningfulness of these relationships. When asked if he felt the friendships he had made in the garden were important to his quality of life, James agreed explaining, “it helps, we don’t have any kids so yeah, it’s important”. James’ statement suggests the social aspects of community gardening may be most important to childless older adults or those with a limited family presence in close proximity. Grace discussed how she felt the social relationships she had made in the garden were becoming more important to her as she aged. She spoke about one particular friendship with a fellow female gardener explaining, “…we have become very good friends and so we see each other outside the garden and we keep in touch about things other than gardening”. Grace noted that community gardening was not her main source of social interaction as she had a large social circle of family and friends established before she
became involved with the garden. Nevertheless, she valued the social interaction she received through her garden membership and felt the friendships she had developed positively impacted her overall well-being and quality of life.

While some participants did develop close friendships with fellow gardeners, more commonly participants described making friends and acquaintances with whom they would only interact in the garden and would not describe as being “close” or “good” friends. Participants who did not have close friendships with other gardeners did however report the social relations experienced in the garden as meaningful and beneficial. Two gardeners, Ryan and Dave who live together as partners, stated that they were not looking to make friends at this point in their lives, as they already had a full social circle, but still believed increasing their opportunity to socialize informally with other gardeners was beneficial and enriching. Ryan explained, “so there’s probably a dozen new friendships, I guess you would call them acquaintances that are rich and rewarding. They are wonderful people and it’s like a pleasure to have met them...”. Dave felt similarly noting, “...I find that gardeners are friendly, relaxed, helpful, so you know they’re nice interactions”. Another participant, Sandra, discussed how she often preferred to be a “loner” and enjoyed her solitude while gardening. Although not a social person, Sandra explained that she liked to see other people in the garden and know that they were there for safety:

…I would say just to be fair and to be honest the main purpose of being here is to grow myself some food. Now if I have a pleasant experience with other gardeners that is a big plus and there are some gardeners here that I see on a regular basis and it makes me feel safe...

While face to face contact with gardeners was not always preferred by Sandra, she mentioned how she enjoyed connecting through email stating:

You open your in-box and oh somebody has sent me something or otherwise you know from day to day there might not be anything in there. That is social interaction and its positive interaction even if I disagree with what they are trying to tell me.

Sandra was the most vocal participant in regards to valuing her privacy and discussed how she felt not all of the social interactions going on in the garden were welcomed;
however, as the interview progressed, she began to discuss the value of human interaction more and more noting:

I can say what I want but it is nice to share a laugh with people and meet people cause otherwise you sometimes, there really isn’t anybody in your life except the mailman and people who call, sales calls; the relatives don’t call, the children don’t call…I don’t really like people but people are important, human interaction is important…

Therefore, community gardening can provide positive social contact and human connection to older adults not specifically seeking social relations and even in some cases making some effort to avoid them. Regardless of whether the participants had developed what they considered a ‘close’ friend, the social aspects of community gardening participation were appreciated by the older gardeners interviewed.

In an attempt to determine the nature of the social interactions taking place among community garden members and the extent of social support available in the garden environment, participants were asked about the topics discussed during general conversations in order to uncover whether gardeners tended to discuss personal stories or whether conversations were strictly garden related. The answer to this question varied depending on the participant. Approximately half of the participants reported that even with garden members considered as friends, they would rarely discuss personal topics, instead sticking strictly to speaking about the garden and its development. One of the gardeners, Gwen, discussed how she valued having access to so many different individuals within the garden environment, always having someone different to chat with but she claimed conversations were related to gardening and rarely got more personal. Betty also agreed that her conversations with fellow gardeners were largely restricted to the discussion of the garden and gardening techniques. Although, she did not feel this made her interactions any less meaningful or impersonal explaining, “we talk about gardening and that’s new and I value that immensely”. It seemed for some participants, having a place to engage informally without having to discuss what is going on in their personal lives was a welcome change. For many of the garden members, the garden acted as a common denominator facilitating conversations that were pleasant and meaningful because there existed between them a shared interest and investment in the well-being of the garden. Participants found gardening to be a meaningful activity in
their lives; therefore, discussions related to the community garden and gardening were valued.

While some participants preferred to keep their social interactions with fellow garden members firmly grounded in their shared interest of gardening, others were more open to sharing aspects of their personal histories. When asked about the topic of her conversations with other gardeners, Debby explained that her conversations were generally based on social issues due to her work with several non-profit organizations. Dave and Ryan both agreed that conversations with gardeners would generally start off garden related, but would often develop into more personal discussions. Dave explained, “…you’re talking about gardening and then they will say, oh when I lived in such and such and you’ll say, oh well when did you live there and so you branch off into just learning actually about them”. Another gardener, Grace, discussed how she had made friends in the garden with whom she could discuss personal stories and life stressors finding a level of social support. She mentioned that there was a lot of gardening discussion taking place, but over time, she had become comfortable enough to get to know many of the gardeners around her plot on a personal level noting, “…we just talk about other things other than gardening: friends that are ill, what is going on for us in a day or our past careers…”. Grace found these interactions beneficial and believed they had a positive influence on her quality of life. These findings suggest that a variety of interactions were taking place within the community garden ranging from brief exchanges related to the development of the garden, to meaningful and valued conversations about gardening, the environment, and social issues at a societal level, to the sharing of personal histories and life events. The type of social exchange depended on the individuals involved, but there was an opportunity for a wide range of interactions and emotional support.

4.4.2. Making Intergenerational Connections

Study participants were asked if they believed community gardens provided a good opportunity to interact with younger adults and/or build intergenerational connections. Many felt the opportunity to interact socially with younger gardeners existed, but the degree to which they engaged in intergenerational relationships varied
between participants. Many gardeners claimed that the majority of the garden members whom they would consider friends were approximately the same age as themselves. They also felt that the majority of gardeners present in the garden on a daily basis were usually older and that there were not many families with children in the garden. None of the older gardeners reported having developed a close friendship with a significantly younger gardener, nor did they take part in a formal mentoring program. Also, no participants reported making intergenerational connections that extended outside the garden environment. However, the majority of participants noted the value of having a mixture of ages present in the garden and believed participating in a leisure activity with younger generations had a variety of benefits. Gardeners also felt that it was important to remain connected with younger generations. One gardener, Sandra, strongly believed it was crucial to the success of the garden to have a mixture of ages stating, “…if this was an all youth garden I think if would be a disaster and I think if it was all old folks it would be. I've always been an advocate for mixing ages”. A second gardener, Dave, had similar thoughts about the benefits of having a variety of ages stating, “…there is the older people that actually really know a lot but they can’t do so much and the younger folks are enthusiastic and lets actually get it built, so it’s a good combination”. When discussing the benefits of intergenerational activities, some older gardeners spoke about how they enjoyed being around the energy, enthusiasm and passion of youth. Gwen explained how she felt being around young gardeners helped the older individuals like herself feel younger. Sandra agreed stating that being in the presence of youth made her feel “ageless”. She also discussed how she enjoyed it when younger gardeners asked her questions about gardening noting, “…it’s nice when young people just think that maybe you know something cause usually they don’t”.

Grace spoke about how she found the community garden was a unique place where older and younger individuals could share a common activity noting:

…I think it is actually one of the few places...our society is very based on age starting from birth and I have always had a real problem with that, how our schools and institutions are age organized…but in the garden as a whole I love the fact that I am here with young enthusiastic gardeners.

This is an important finding as there were not many community based recreational activities providing the opportunity for young and older adults to socialize with each
other. Some of the study participants felt the garden was one environment where age was not important as all garden members did the same jobs regardless of their chronological age. Leah and Betty both felt age was an unimportant factor within the garden, with Betty stating, “everybody is a gardener you know, you don’t when you work here together you don’t wonder what is the person’s age you just say this job needs to be done can you do it”? Betty also described the lack of emphasis on age as “liberating”. When asked if older gardeners tended to provide gardening expertise and tips to younger gardeners, Grace claimed that the knowledge exchange went all ways stating, “…everybody is doing it young to young, old to old and old to young”. These findings suggest that for some participants, seeking out intergenerational connections is not something that they specifically considered or sought after. Social interaction and the exchange of gardening knowledge seems to go on between all garden members with little emphasis on or attention to the age of the individuals. This is an interesting finding as modern society often segregates older adults based on chronological age sometimes resulting in ageist attitudes.

Overall, the majority of participants felt community gardens provided the opportunity to interact with individuals from different generations. They also felt that intergenerational connections were informally made in Cottonwood Community Garden. While seen as beneficial, intergenerational relationships were not sought after by participants or formally supported through mentoring programs. One gardener, Betty, believed that making intergenerational connections would be more important to her if she didn’t have children or grandchildren of her own. If that was the case, she commented that she would actively seek out these relationships noting, “otherwise you lose touch”. She also discussed how her own grandchildren loved coming to the community garden to play and explore, referring to it as “the secret garden”. A few participants wished there was more opportunity to interact with younger individuals and hoped more young families would become involved in community gardening in the future. Other participants believed there were a lot of younger gardeners present in the garden. Gwen exclaimed, “I think younger people are getting more inspired about gardening and getting their own produce and that and you can see it here, there is a lot of young gardeners”. Several participants acknowledged the importance of passing on their love for gardening to younger generations and the educational value of community
gardens. Ryan explained how he enjoyed seeing young adults get involved with the
garden and wished his own children, who are in their early twenties, would also find a
love for gardening stating:

..it's really interesting to see them engaged in gardening as an activity
and the joy and pleasure they get out of it and of course I think oh and
what a wonderful thing if I can entice my children who don't garden to pick
it up.

While the opportunity to incorporate more formal intergenerational programming
exists at Cottonwood Community Garden, currently very little mentoring takes place.
There is a section of Cottonwood Garden that is maintained by a non-profit organization
made up of young adults called the ‘Environmental Youth Alliance’, but study
participants did not report having much contact with these gardeners, noting that they
mostly stayed in their own section of the garden and spent the majority of their time
working on projects at nearby Strathcona Community Garden. Despite the close
proximity to this designated youth garden, the participants rarely interacted with the
younger gardeners and did not maintain close relations with the Youth Alliance. One
new initiative supported by the garden was a labelling project that involved tagging many
of the plants and trees in the garden with Quick Response Barcodes that can be read by
any smart phone. These codes provide individuals with educational information on each
of the labelled plants. It is the hope of one of the study participants, Darlene, that these
codes will be used as an educational tool motivating school teachers to use Cottonwood
Community Garden as a destination for field trips. Projects like this may increase the
number of youth in the garden facilitating intergenerational contact and encourage young
adults and children to get involved in community gardening. It seems evident that many
older gardeners value the opportunity to connect socially with younger individuals, but it
was not clear how significant these relationships are to the quality of life of older
community gardeners. Nevertheless, it seemed that simply being in the presence of
younger generations and sharing a common love for gardening and more specifically for
Cottonwood Community Garden afforded a sense of enjoyment to the older gardeners.
4.4.3. Creating a Sense of Community

Existing research studies have found community gardens provide a social environment promoting community engagement and the production of social capital (Glover, 2004; Kingsley et al., 2009; Kingsley & Townsend, 2006). The findings from this study support these claims and suggest older adults view community gardens as ideal places to build community ties and increase social cohesion. The older gardeners interviewed for this study were asked if they felt a sense of community existed within Cottonwood Garden. Many of the participants agreed that a sense of community existed, finding the community garden environment was similar to that of a “village”. In answering this question, study participants discussed several issues that they thought contributed to the sense of community existing within the garden including: cooperation and team work, common bonds and similar values, and the sharing of resources. The environmental design of the garden also helped increase the cohesiveness of the group. Due to the fact that approximately half of Cottonwood Community Garden’s 4-acres is designated for common or shared gardening areas cultivated and maintained communally, it is necessary for garden members to work together in order to successfully preserve the garden. The garden is also attached to a large local park in the Strathcona neighbourhood connecting it with the larger community.

Study participants found the formal activities organized by the garden such as the work parties, general meetings, community workshops and annual ‘Friends and Family Day’, boosted cooperation and encouraged garden members to work together for the improvement of the garden. These group activities were valued firstly for practical reasons, such as their role in successfully maintaining the garden, but were also thought to have social benefits helping to unite garden members. One gardener, Gwen, valued the social aspects of the group activities stating, “I think it unites the gardeners together more and everybody gets to see everybody…you get together and you chit chat”. Betty and Grace also felt the group activities and the garden’s common spaces facilitated social cohesion. Grace had the following to say about the garden’s work parties and general meetings:

We have a potluck lunch that is always excellent so we sit under the meeting tree and have our lunch and then have a meeting to make
decisions about the garden and there is just a camaraderie with people running all over the place with their wheel barrows and shovels and weeding. It’s fun.

Betty also believed it was important to provide the gardeners with opportunities to work together stating, “I believe in cooperation, I believe in people working together. I think it’s very very good, you know you can burn out if you do too much of it but to have none of it is not the answer”. Dave and Ryan also believed the work parties and general meetings, held on the last Sunday of every month, played an important role in bonding garden members providing the opportunity to unite a large number of gardeners over a common purpose. Dave explained, “you are participating, interacting, doing things together…and building community is an explicit part of what is supposed to be going on here”. Debby likened the garden’s work parties to an “old fashioned barn raising”.

Despite the practical benefit of the monthly work parties and general meetings and their ability to bring garden members together increasing the sense of community in the garden, many participants felt they could at times become “burdensome” and “tedious”. One of the participants, James, even doubted the necessity of the work parties and meetings believing the garden would successfully run itself, explaining:

…I have mixed emotions some people I like and some people I don’t like. There is too much politics in the garden, we spend half of our work party listening to other people whinge about who’s doing what and who’s not doing what and all that kind of stuff and they propagate rules to correct behaviour, which never works, doesn’t work so sometimes it’s beneficial and sometimes it’s damn irritating.

Similarly, Sandra stated, “...I think people can make a valuable contribution without being required to participate”. Other gardeners also had some issue with the idea that they were required to complete their work commitments on designated days and found the meetings could sometimes be unproductive. When discussing the monthly garden meetings, Darlene, noted “I’ve found [they have] become quite bureaucratic and cumbersome”. Despite some gardeners feeling obligated to attend the work parties and general meetings, most of the study participants believed the positive community building facilitated by the garden’s formal activities outweighed the negative aspects associated with having required work commitments. Dave explained, “…it is totally worth it, like we’re acknowledging that’s the down side but it’s totally outweighed by what
you get from that, being organized and talking together and doing things as a group”. Overall, participants found the group activities led to increased cooperation, teamwork and camaraderie among garden members. Similar to what was found in a study by Glover (2004), the participants perceived the individual benefits of garden membership were worth the social investment.

In addition to cooperation and teamwork, sharing common bonds and similar life values were also thought to contribute to the sense of community present in the garden. Many of the gardeners interviewed were physically fit and were advocates for maintaining active lifestyles. The participants also shared similar views on environmental issues feeling strongly about organic gardening, sustainability and eating locally grown produce. The study participants also shared a love for gardening and for Cottonwood Community Garden. Therefore, preserving and maintaining the garden was a common goal shared by the participants. Although, some of the participants came from different backgrounds and held different opinions about what would be in the best interest of the garden, it was evident that they all enjoyed gardening and that commonality seemed to be a mutual bond helping to unite the group. Grace discussed the common bond between community gardeners in her interview stating, “…you meet people you know you got common interests, you’re all here gardening, so it’s easy to have a conversation…we are all here because we love gardening, so that’s really nice”. Other gardeners also felt having a common interest like gardening made it easier to make friends and initiate conversations with fellow garden members. One gardener, Dave, felt he personally benefited from the opportunity to socially interact with likeminded people explaining:

Here it’s being around people who generally kind of think and feel the way you do about a lot of issues in life…here at the garden it’s like these are the people who also think it is important to spend time out in nature, it’s worth getting your hands dirty, don’t be worried about getting dirty you know, it’s about the environment so that’s our kind of you know left leaning environmental kind of life style, so people here are in sink with that so it just always feels good…

The most prominent commonality shared by the study participants was their strong attachment to Cottonwood Garden and their dedication to its preservation. Preserving
the garden was a communal goal that required vested interest from group members resulting in increased cohesion and social capital.

The sharing of resources such as seeds, plants, produce, gardening knowledge and ideas, social support and physical help also contributed to the sense of community found within Cottonwood Garden. During the interviews, participants were asked if group membership benefitted them as individuals. The majority of the participants believed community gardening membership offered important individual benefits unavailable outside of a communal environment. The sharing of plants, seeds and produce was the most common benefit discussed by participants. One gardener, Dave, noted this type of sharing was very common among gardeners stating, “people are always offering me, here take this plant, take these seeds, have this”. Ryan agreed, describing how a gardener in a neighbouring plot had provided him with lettuce all summer when his had failed. Grace also described the generous nature of fellow gardeners in the following excerpt from her interview:

...so that gardener took care of the bed over there and I told him I admired this plant in his box...and if he could give me one sometime that would be great, so he rushed right off immediately and came back with a little cutting of it and it’s doing really well this year...and I got the oregano and chives from another gardener over there...

The second most commonly reported benefit from group membership was the exchange of knowledge experienced among gardeners. The older garden members truly valued having access to the breadth of knowledge present within the community garden. Grace discussed in her interview how important this commodity was to her noting, “...the variety of gardening that goes on it’s just way beyond anything I could possibly imagine on my own, the plants, the different ways of gardening, the different things that are gardened. That’s wonderful!” Betty also reported access to gardening knowledge as an individual benefit of group membership exclaiming, “there is an amazing amount of knowledge collectively from all the people here so that’s very exciting...you wouldn’t get that if you gardened alone”. Gardeners discussed the many new techniques they had learned since joining the garden both informally through casual conversations with fellow gardeners and formally through community workshops. It seemed that the opportunity to both teach and learn from others was a bonding experience for many participants. Two participants also mentioned that they felt social
support received from fellow gardeners was an important benefit of group membership. Gwen, in particular, felt she benefitted from the companionship received from community gardening, which helped reduce her feelings of loneliness and eased the transition of recently moving from her family home to a much smaller condo. Participants also mentioned that other gardeners would often help water or weed their garden plots when they were on vacation or unable to visit the garden due to an illness. The older gardeners participating in this study were actively involved in and benefited from this reciprocal exchange of goods and services.

Findings from this study are supported by previous studies suggesting social capital exists within community gardens (Kingsley & Townsend, 2006; Wakefield et al., 2007). For the purposes of this study, social capital will be defined as “the ability of people to work together for common purposes in groups and organizations” (Fukuyama, 1995, p. 10). According to Dekker and Uslaner (2001), social capital is essentially the “value of social networks, bonding similar people and bridging between diverse people, with norms of reciprocity” (as cited in Social Capital Research, n.d., para. 3). As discussed in the above paragraphs, the study participants expressed themes of cooperation, working towards a common goal and reciprocity, which are all aspects of social capital. Three types of social capital were found to exist within Cottonwood Community Garden: bonding, bridging and linking social capital. Bonding social capital, which involves trusting networks of people sharing a common social identity, was found to exist between family members gardening together at Cottonwood Garden and between older gardeners who had developed friendships with fellow gardeners of a similar age (Firth, Maye & Pearson, 2011; Kingsley & Townsend, 2006).

Seven of the garden members interviewed had a family member who was also a member of the community garden, being either a spouse/partner or adult child. For these individuals, spending time in the garden and sharing a common activity helped strengthen a pre-existing bond. Two of the study participants, Leah and Gwen, expressed the important role community gardening played in their relationship with their grown children. Having a shared pastime they both could enjoy provided them the ideal excuse to spend time together on a regular basis. Gwen, who lives in West Vancouver, explained that she chose to commute to Cottonwood Community Garden because her daughter gardened there and gardening together provided them with valuable “mother
and daughter time” noting, “we meet on the weekend and water and weed together”. Leah also joined this specific garden to be closer with her son stating that this time together was the main motivating factor for her to continue community gardening. Community gardening was also an important bonding experience for partners James and Darlene and Dave and Ryan, who appreciated the fact that gardening was an enjoyable activity they could participate in with their loved ones. Bonding social capital also existed among garden members who had developed friendships with other gardeners whom they had previously not known. Among the study participants, these friendships seemed to mainly develop between gardeners of similar age who shared similar life values. These findings show older adults benefit from social capital found within community gardens as it affords them the opportunity to work closely with trusted family and friends in a reciprocal relationship. Gwen highlighted the shared bond between gardeners stating, “the people are just awesome, it’s like a group of people that have one common area, one common hobby is gardening and that’s what brings us all together…”.

Evidence of bridging social capital, which involves weaker ties between individuals with common goals but different social backgrounds, was also found among garden members in Cottonwood Community Garden (Firth, Maye & Pearson, 2011; Kingsley & Townsend, 2006). Although it is difficult to accurately classify which relationships are examples of bonding and which are bridging social capital, as limited background information is known about the majority of the garden members, some participants did discuss the benefit of belonging to a group which included people from different socio-demographic backgrounds. Many of the intergenerational relations within the garden appear to be examples of bridging social capital as the older gardeners reported that they enjoyed informally interacting with younger gardeners while working towards a common goal, the maintenance of the community garden. When asked if she felt the community garden provided her the opportunity to interact with individuals she would not otherwise come into contact with, Grace agreed that she would most likely not be in contact with many of the younger gardeners whom she interacted with in the garden. Although the ties between them were not particularly strong, Grace appreciated being around younger individuals stating, “…I love the fact that I am here with young enthusiastic gardeners”.

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Due to the large size of the garden and the attraction of its many common areas, members come from all over Vancouver to garden at Cottonwood increasing the garden’s diversity. One gardener, Betty, discussed how her community gardening participation had allowed her the opportunity to meet new individuals from all over the city exclaiming, “…an amazing amount of knowledge from each individual gardener here and people from every background, which is so interesting…”. Bridging social capital not only existed between garden members, but was also observed to exist between gardeners and non-members who visited the garden. The garden is regularly used by non-members who also share a love for nature and enjoy visiting the garden for its aesthetic beauty. The bonds between members and non-members appeared to be weaker than those between the garden members, but were often discussed positively by participants. In the following excerpt, Sandra discussed the social interactions she would sometimes share with visiting truck drivers from one of the many warehouses located near the garden:

…I’ll often be at my garden here and maybe a truck driver is waiting while his truck is being unloaded or he has to kill an hour until his unload time or something and he’ll just wander through here and tell me where he’s from, look at the gardens and just talk about stuff. It’s amazing.

On the other hand, some participants felt the garden did not provide a good opportunity to meet people from different backgrounds and cultures. As discussed previously, many study participants felt garden members shared very similar lifestyles and values. Debby reported that she had reached out to aboriginal and other multicultural groups she was familiar with through her work as a publicist in hopes to bring more diversity to the garden stating, “…the garden was a little too white for me”. However, the majority of gardeners appeared to be non-ethnic and the gardeners participating in this study were predominantly Caucasian and middle class.

While bonding and bridging social capital were most commonly found within Cottonwood Community Garden, linking social capital, which is the connecting of individuals from very different situations, also took place (Firth, Maye & Pearson, 2011). Linking social capital generally resulted from gardeners’ interactions with non-members living in the East Vancouver neighbourhood who were from a very different social class and social situation than the gardeners. These interactions were not always positive but
they were an important part of co-existing in the east end of the city. Being located in East Vancouver, the gardeners frequently came in contact with individuals from a wide range of social classes, included those who were homeless. One participant, Sandra, felt torn about fellow gardeners’ attempts to deter homeless people from camping in the garden stating, “…I don’t mind a respectful homeless person, you know rolling his bag out there…but I mean we can’t have a camp here either…”. Sandra also discussed how she used to use the community garden as a tool to help addicts overcome their addictions stating:

...my first plot here wasn’t really my own plot it was in my name but I volunteered for a non-profit society and we brought out addicts down here and I would bring two or three down and it was just on a volunteer basis and we would weed and water and plant some stuff and that was just an activity for them while they were trying to clean up and turn their life around.

The gardeners have also found a way to benefit their less fortunate neighbours by donating excess crops to the food bank, giving approximately 600 kiwis annually. In this way, the community garden brings together individuals who may not otherwise come into contact helping to bring awareness to some of the socio-economic problems existing in the Strathcona neighbourhood. Overall, the study participants benefited from the high levels of social capital found in the community garden often benefitting as individuals from group membership. The bonding, bridging and linking social capital found at Cottonwood helped unite the garden members into a cohesive group working towards the maintenance and continued success of the community garden, while also connecting them with their neighbours from various social backgrounds. When asked why she joined a community garden, Grace stated, “…I enjoy the community that is here…I wouldn’t give up the community aspect of it to garden at home”.

4.4.4. Resolving Conflicts

Despite the sense of community and cohesiveness between garden members, disagreements, differences in opinion and conflicts over the direction of the garden’s affairs were reported. When asked what they thought was the biggest challenge of community gardening membership, the majority of participants cited dealing with a large
group of people. As one gardener, Betty stated, “...like any kind of farming community there can be huge feuds”. The study participants believed these issues were not specific to community gardening, but were problems commonly found in all large groups. The majority of disagreements and differences in opinions arose from conversations over what would be best for the garden. Having invested a considerable amount of time caring for the garden, the older members often held strong opinions regarding what the garden needed or not, in order to survive. One of the participants, Sandra, described an argument she frequently had with fellow gardeners over the garden maintaining a “wild” area. She felt sections of the garden should be left to grow wild because natural landscapes provided beneficial habitats for insects and birds, while others felt the garden should be well maintained and “picked up”. Sandra argued:

...you can see other places in the garden where everything is picked up and you can see they are encroaching on our space there, you know everything is picked up and they like to see the dirt but I think the dirt should be covered, it should have its clothes on. [My part] is well-clothed and nice and their part, I think it looks terrible.

There were also conflicts in the garden caused by a few garden members who opposed building the garden's accessible expansion. Debby who is actively involved in the garden’s organizations spoke about the challenges of running a garden democratically noting, “...operating something democratically is not an easy thing”. She felt some gardeners were “selfish” and tried to bully their point across. Other participants also felt there were bullies in the garden who forced their opinions on others. Sandra explained, “I think in any group like this you know sometimes a bunch of bullies get ascendency…I don’t want lots of rules...”. Other gardeners felt similarly about the garden’s rules and the bureaucratic nature of its operations suggesting power struggles exist between members with some gardeners having more say than others over what transpired in Cottonwood.

Dealing with conflicts within the group was deemed the biggest challenge associated with community gardening; however, some participants thought the act of resolving these differences also played an important part in building community within the garden. Gardeners accepted the fact that there would always be opposing points of view and felt overcoming these differences helped strengthen and unite the group. Darlene discussed the challenges of dealing with group dynamics:
…there is no really one person in charge of the garden and so we are all volunteers and you know it’s a big piece of land and there is always people who like to have control and power and there is always going to be different ways of doing things…for me it’s important that we act ethically…

For Darlene, it was very important that disagreements were handled in an ethical manner and that everyone involved was given the opportunity to express their opinions. Some participants enjoyed the process of discussing different options and working through differences in opinion, finding the experience beneficial. Ryan explained how it could sometimes be difficult during the garden meetings when members were arguing back and forth on an issue, but also found it to be an interesting social experiment explaining, “…it’s entertaining just to hear you know the different personalities exert themselves over some silly issue, so you know I guess that’s community you learn how to interact with people…”. Ryan also felt the meetings were the ideal place to hone his inter-personal skills, which he felt had diminished over time since being out of the work force explaining:

…this kind of meeting that happens here keeps you in touch with that kind of social engagement and I think that is probably good…I think you can get quite isolated from that then and just you know, you stop learning how to interact in that way in a group and group dynamics.

Other gardeners agreed belonging to a group and resolving group conflict helped improve their communication skills. These findings suggest older adults may benefit from group membership in community gardens through increased social interaction and continued exposure to group dynamics, which they may not otherwise have access to in their daily lives.

4.5. “Staying Invested in the Garden as I Age”

Continuing gardening participation was important for the older gardeners interviewed during this study. For the majority of the participants, gardening was one of the main activities in their lives and had a significant impact on their overall well-being. Due to the physical, psychological and social benefits received from community gardening participation, many of the participants hoped to continue gardening long into
their old age. Three main codes were discussed by participants when explaining why they planned to stay invested in the garden as they aged: “continual learning process”, “supportive environment” and “awareness of limitations”. The first code, “continual learning process”, explores the reasons why community gardening continues to challenge and hold the interest of the older gardeners. The second code, “supportive environment”, discusses the participants’ perspectives on accessibility and the potential of community gardens to allow older adults to garden longer. Finally, the third code, “awareness of limitations”, explores gardeners’ future expectations and the idea that they may have to limit their involvement in the community garden as they get older.

**4.5.1. Continual Learning Process**

One of the main reasons behind the study participants’ social and psychological investment in Cottonwood Community Garden was the opportunity the garden provided for them to continue to learn and develop new skills. Both the community garden and the act of gardening kept the participants engaged and effectively held their interest over long periods of time. It is arguably part of our human nature to want to continue to grow and develop as an individual and a component of this journey towards self-actualization involves the acquisition of knowledge. The older adults in this study valued the endless learning possibilities afforded by the garden and the diversity of the garden members. Study participants frequently mentioned one of the important benefits of gardening was the fact that they were constantly learning new techniques through trial and error gradually honing their skills. Gwen explained how gardening was good for maintaining cognitive functioning because she was “learning something every day”. Betty discussed how she had learned to garden from scratch in her later years and claimed it had become one of the main activities in her life because “it made [her] interested…there is like endless possibility of learning, so it’s really great”. Ryan also appreciated the continual learning process facilitated by the community garden having picked up new techniques since joining Cottonwood such as, learning how to cultivate raspberry and blueberry bushes. When Grace was asked about her incentive to stay in the garden, she explained how she was excited to get a second plot to expand her garden and continue to challenge herself:
I love it and I’m gardening away here and I’d just like to plant a few more potatoes, I’d just like a few potatoes and there is always something to do in this plot, you know you can plant and it’s just…I mean learning about gardening is never done.

A second significant reason behind their love for gardening and their intention to continue the activity in the future was that community gardening challenged them intellectually. They were learning something new on an ongoing basis and they never got bored of the activity. The endless potential to learn about gardening seemed to be a significant aspect of why gardening was so meaningful and important to many older adults.

The opportunities to acquire knowledge and develop new skills were supported through informal interactions among garden members and through formal workshops held within the garden. One participant, James, discussed how belonging to the garden offered both informal and formal opportunities to learn stating:

…I people will stop and talk about your garden and see what’s growing and that kind of stuff so that causal exchange you know…there is a guy who just became interested in bee keeping a few years ago so he’s full of information and happy to talk and that kind of stuff…and we run workshops a couple times a year on how to propagate and stuff like that so there is that kind of formal exchange too.

In addition, some of the study participants set goals for themselves to help further their gardening knowledge and understanding of the environment. Darlene, explained her incentive to continue community gardening:

…I’m just getting involved in more and more things. I guess I see more things that I would like to learn about…we are trying to bring back some bird habitat so I would like to learn more about the birds that are coming through the garden now and how to create habitat for them…so it’s just learning more…

Another gardener, Betty, discussed how she was interested in learning more about the scientific aspects of plants and their healing abilities. Her goal was to discover more about the substances emitted by the various plants in the garden and their influence on mental and physical health. Overall, the majority of study participants expressed a strong desire to continue learning about gardening and the natural environment, regardless of their age.
4.5.2. Supportive Environment

Research shows community dwelling older adults are more likely to spend time outdoors when they have access to barrier free outdoor environments. Spending time outdoors positively impacts the overall well-being and physical health of older adults (Jacobs et al., 2008; Rantakokko et al., 2010; World Health Organization, 2007). According to Sugiyama and Thompson, “the outdoor environment offers great opportunities for older people to be physically active, to have contact with nature and to meet with friends and neighbours” enhancing their quality of life (2006, p. 168). The findings from this study support the existing research on outdoor environments and suggest accessible community gardens can prolong the gardening participation of older adults allowing them to maintain active lifestyles and stay connected with their community. Although the older gardeners interviewed for this study had differing opinions regarding the necessity and demand for accessible gardens, their overall perception was favourable with two of the participants relying heavily on the accessible features of Cottonwood Community Garden’s expansion and one participant building raised plots in the original section of the garden. Out of the eleven garden members interviewed during this study, two used accessible raised beds located in the garden’s accessible expansion. In addition, one gardener using a wheelchair, had multiple garden plots in the original section, but had previously paid to have them adapted into raised beds, including a drip watering system. Although this participant had made adaptations improving the accessibility of her plots, she was required to transfer out of her wheelchair to garden due to the limited space between plots in this older section of the garden. The remaining participants used traditional in-ground gardening plots.

Gardeners were asked if they felt the accessibility of the garden would allow a higher number of older adults to join the garden and if the accessible features would allow them to garden longer. The garden members had mixed feelings regarding whether or not the accessible expansion would increase the number of older adults in the garden. Some of the participants thought these features had already increased the number of older gardeners and/or that they had the potential to attract more older adults to the garden in the future. Others felt the location of the garden was less than ideal for older adults with mobility problems and did not think the accessibility of the garden would
be enough to attract the oldest-old. One gardener, James, felt older adults and people with disabilities would avoid joining Cottonwood because of the neighbourhood, stating, “the difficulty of reaching it umm, the problems we have with theft it hasn’t been attractive to disabled gardeners...I think that context is everything and here it hasn’t been necessary”. Betty also thought the accessible expansion had not yet attracted older adults or people with disabilities because of its location. She felt poor public transportation and a lack of advertisement targeting specific groups who may benefit from the accessible features was to blame for its underuse. However, she felt that the raised beds were beneficial and being used by people who needed them because of back problems. Another gardener, Darlene, saw the benefit of providing an accessible space to garden but questioned the demand stating, “I think it is valuable because it allows more people to garden who wouldn’t, I think it is valuable but I don’t think the whole garden needs to be made accessible at this point...I personally don’t see the need...”. While other gardeners thought there was a high demand for raised beds, although not necessarily from older adults or people with visible disabilities. Debby explained the accessible beds were designed to accommodate a variety of individuals including people with “hidden disabilities”, such as back or hip problems. She believed the raised plots were benefitting a wide variety of gardeners of all ages who otherwise would be unable to participate stating:

…one of the lovely, lovely things is it makes such a difference to people I mean there’s one person gardening in the expansion well several people that come from the North Shore because there is nothing anywhere else...so that’s one of the pleasures for me is you know how happy people are to find some place where they can garden.

Another gardener, Dave, also felt the accessible beds were allowing more individuals to garden who otherwise would not be physically able to participate stating:

…there are two or three women that I have seen in the extension who talk about, thank goodness the raised beds are here because we do have mobility or whatever stability issues so you know I’ve chatted with two or three people who said, oh it’s really good for them to be able to have the accessible raised plots.

Most of the garden members interviewed felt having the accessible features at Cottonwood Garden would allow them to garden longer than if they were gardening at home. The majority of the gardeners currently using in-ground plots thought they would
transfer into a raised bed in the future, if they physically needed one to continue gardening. Two of the participants, Grace and Gwen, felt they would be unable to continue to garden if it wasn’t for the supportive environment at Cottonwood. Grace explained why she valued having access to an accessible raised bed stating:

…I have very little feeling in the ends of my nerves…it affects my balance because I can’t, like now I can hardly feel the ground so I’m always wall walking and I can’t bend over because then it’s hard to keep my balance to get back up…so I love the box…I look at these people gardening in the ground and I think how do they do that?

Gwen was also very grateful to have an accessible bed explaining, “I do have problems if I’m bending over a long period of time that is why I usually sit and pull weeds but I was very fortunate at Cottonwood because they have raised beds so you don’t have to bend over, so that’s a plus”. Gwen also felt the accessibility of the garden was not only helping her garden now, but hoped it would allow her to garden longer exclaiming, “till I’m a 100”! Another gardener, Sandra, reported that although she did not physically need the raised taps found in the garden’s expansion, she enjoyed the convenience of them and felt Cottonwood provided the support that would allow her to garden for many more years. Dave and Ryan, who were in their fifties, felt Cottonwood was a place where they could see themselves gardening for many years and were happy to know the support would be there if they needed it in the future. Dave felt having an accessible environment would allow Ryan and himself to garden later into their old age explaining that they would be very willing to use a raised bed in the future, “it’s just a question of when we get there…our plan is more gardening the older we get”. While the majority of the participants felt the support afforded in the community garden would allow them to garden longer into their old age, a small number of participants did not feel the accessibility of the garden would have an impact on their gardening activity. These participants also did not envision themselves needing to use accessible gardening beds in the future.

In addition to the support provided by the physical environment, Cottonwood Community Garden also provided support to those in need by providing voluntary manual labour. If a garden member with an in-ground plot is no longer capable of gardening in the ground, there is a support system in place to organize volunteers to convert their plot into a raised bed. It is generally the responsibility of the gardener to
pay for the necessary supplies, but for those with limited finances, the garden has also helped locate donated wood. Older and disabled gardeners can also receive help filling their plots with soil. Grace felt she personally benefitted from community gardening membership because she sometimes received assistance from fellow garden members stating, “…because of my physical limitations…this box was provided for me filled with dirt. If I wanted help with wheel barrowing or other things, there are people who have that as an ongoing task to help people who need help”. One of the garden members who is a major advocate for the accessible expansion, Debby, ensured that one of the garden’s ongoing tasks would be providing assistance to older adults and people with disabilities. However, despite the availability of this support, she did not feel the garden would go out of it’s way to provide help if she did not make it one of the garden’s responsibilities explaining:

…”Although most people supported being accessible I don’t think that if I wasn’t here that people would organize to make sure there’s somebody whose task was to help or you know it was my idea too that we would provide the volunteer labour if somebody wanted to you know convert, so I’m not sure if people would go out of their way, like they like it and they in fact a lot of people really feel excited about it and feel good about it, right…but I don’t think, I’m not sure how many people would get organized to make sure it was happening…the garden isn’t angelic and decided that they would do that.

Garden members also had access to shared tools and benefited from the sharing of plants and seeds making community gardening affordable for individuals with limited funds and accessible for those individuals who had difficulty transporting their own gardening equipment. The combination of the accessible environment, availability of social support, availability of physical assistance and access to gardening tools, plants and produce make community gardening participation attainable for a variety of individuals of varying ages, functional abilities and socio-demographic backgrounds.

Overall, garden members were impressed with the accessibility of Cottonwood Community Garden and expressed feelings of pride over the completion of the garden’s accessible expansion. However, there were some gardeners opposed to the accessible expansion. One participant, James, campaigned against making the garden accessible arguing that the raised beds and wide walking paths took up too much space reducing the total number of gardening plots and were much more expensive to build. James
also felt there were not enough disabled gardeners at Cottonwood to make such a large expansion necessary. When asked if he felt the supportive environment found in the accessible expansion would allow older adults to garden longer he replied:

…well certainly it is true but you know bending and stretching is not a bad thing for older people too you know, so yeah I’m not a fan…my attitude will probably change as I age you know if I loose mobility or something then I will be happy to get a raised bed...

Although, James was not a proponent of the accessible expansion, it seemed he still perceived some benefit acknowledging that a supportive environment may benefit him in the future. Despite the fact that not all the garden members were in support of accessibility, the majority of the gardeners interviewed believed the supportive environment provided by Cottonwood Community Garden allowed individuals to participate in community gardening who otherwise would be unable to garden and would prolong gardening participation for many older adults in the future. As many of the older gardeners were highly invested and attached to the community garden, prolonging gardening participation will likely have a significant impact on the quality of life of the garden members as they age.

4.5.3. Awareness of Limitations

Five of the study participants discussed how they believed their community gardening participation may be limited in the future due to the increased probability of developing health and mobility problems commonly associated with advanced age. While the majority of these garden members hoped to continue gardening for many years and believed the supportive environment provided at Cottonwood Community Garden would allow them to do so, some participants anticipated a time when they would have to scale back their level of involvement eventually ending their participation altogether. Two garden members, Betty and Darlene, currently in their sixties and very actively involved in the operations and maintenance of the community garden, explained how they believed their level of participation and involvement in the garden would increase over the next ten years; but they also envisioned themselves gradually scaling down their time and work load as they reached their late seventies. Darlene, explained how she hoped to remain connected with the garden in some capacity even if she had to
let go of her present work commitments and was no longer capable of maintaining a
garden plot on her own. While Betty discussed how her life would be negatively
impacted if she could no longer remain an active gardener stating, “it has become one of
the main activities in my life”. Although Betty discussed how she anticipated she would
have to scale back her gardening participation in approximately ten years, she had a
positive perception regarding the maintenance of her physical capability. When asked if
she thought she would use a raised gardening bed in the future, Betty explained how
she did not envision herself requiring one when she thought about her future, stating:

At my age maybe this is what happened, I’m 69 I’ve discovered that I go
very much year by year you know, what will my life be like next year and
so far I don’t sense the need right but making plans for when I’m 75 or 80
something it may be ridiculous but I see myself crawling around on all
fours or I don’t project myself, that may be unrealistic, I don’t see that
projection for myself.

Grace, who required a raised gardening bed due to a neurological condition
affecting her balance, felt her future gardening participation relied heavily on her physical
health. Unlike Betty, Grace who was also in her sixties already faced mobility problems
making her projection of the future less optimistic. While Grace was very actively
involved, acquiring a second raised gardening plot to challenge herself and increase her
food production, she worried about what would happen in the future, if her condition
worsened. She would like to stay involved with the community garden as long as
possible, but fears when the time comes she won’t be able to “let it go gracefully or let
people help [her] more”. Grace was unsure whether gardening would bring her the
same pleasure if she became too dependent on others. Another gardener, James who
campaigned against Cottonwood’s accessible expansion, also felt the enjoyment of
gardening may be lost if he were to experience health or mobility problems in the future
stating, “…we don’t think of ourselves as geriatric…I’m sure as soon as your health
deteriorates…that stuff limits your capacity to enjoy yourself and be active”. The
possibility of future health problems limiting their ability to garden and staying actively
involved in the maintenance and operation of the community garden seemed to weigh
on some of the older gardeners, who expected their lives would be negatively impacted
by their inability to continue gardening. Sandra, who was very fit and regularly rode her
bike to the garden, discussed how her situation may change as she ages, explaining:
...I'm still fit. I remember when I was in my forties I thought, Oh boy if I can still ride my bike like so and so when I'm seventy then I've made it but now I think, Oh god if I can still do it at ninety I'll have made it or at least gardening or something. When I can't ride my bike anymore then how am I going to get here? It's a long haul...

Sandra acknowledged that transportation to the community garden may become more difficult, but maintained a positive outlook hoping to continue an active lifestyle for many more years. Another gardener, Ryan, also hoped to stay active seeing himself gardening in later life exclaiming, “like talking senior, senior, 75 or 80”! It seemed the garden members were optimistic about maintaining their gardening participation as they aged, while acknowledging that they may have to reduce their work commitments and adapt to maintain their involvement and stay connected to the community garden. However, some gardeners questioned whether they would continue to enjoy the experience of community gardening if their health were to deteriorate.

4.6. Gardening in East Vancouver

Research shows community gardens have the potential to rejuvenate decaying urban environments acting as catalysts for positive reform (Glover, 2004). Findings from this study found Cottonwood Community Garden helped renew the Strathcona neighbourhood located in East Vancouver bringing life to an industrialized urban landscape by improving the aesthetic appeal of the area and providing a pleasant gathering place for community members. The theme, gardening in East Vancouver, is comprised of three main codes: “engaging the community, “rejuvenating the neighbourhood” and “problems with the public”. The first code, “engaging the community”, discusses the ways Cottonwood Community Garden acts as a catalyst for community engagement. The second code, “rejuvenating the neighbourhood”, addresses the garden members’ perceptions of how the community garden benefits the surrounding neighbourhood. Finally, the third code, “problems with the public”, explores the challenges of being located in a historically disadvantaged part of the City of Vancouver.
4.6.1. Engaging the Community

During the interviews, garden members discussed why it was important for Cottonwood Community Gardens to maintain a positive relationship with the public. The participants felt it was important to have the support of the people living in the surrounding community in order for their garden to have longevity. One gardener, Darlene, explained the mutually beneficial relationship between Cottonwood Community Garden and the surrounding neighbourhood in the following excerpt from her interview:

...you know being in a community we went to the Parks Board when we wanted to acquire that land for the expansion, it was Parks Board land so we had to apply to the Parks Board and they did a survey of the surrounding neighbourhood so we needed the support of our neighbours to get that. So we depend on that and we try to benefit, that is one of our mandates in terms of education, the open houses were started to bring in community, to bring in neighbours and the Family and Friends Day again we will try to bring in the neighbourhood.

The garden members believed it was important to ensure the outside community felt welcome in the garden, particularly because it neighboured a public park. Holding annual workshops open to the community and hosting the ‘Friends and Family Day’ invited people living in close proximity to the garden to take part in educational group activities bringing people in the community together and encouraging them to learn about the benefits of community gardens. Cottonwood also developed a community compost open to community members boosting community engagement and improving the neighbourhood’s sustainability by turning biodegradable waste into valuable potting soil. Overall, the majority of the gardeners were advocates for the garden to remain open and accessible to the public.

Many participants also valued the informal social interactions that took place between the garden members and the outside public. During an average visit to the garden, most garden members would experience some form of social interaction with non-members living within the east end. Debby described her experience stating, “...any given day on this side [of the garden] anywhere from 3 to 30 people will wander through and some of them are quite friendly...golly it’s amazing some people have been wandering through the garden for like twenty years”. Debby also explained how many individuals living in the neighbourhood felt connected to the garden, “oh yeah, there are
definitely people who kind of feel it’s their garden right, which is nice, very nice...”. Betty also felt many of the people living near Cottonwood felt a strong connection to the garden stating:

…there’s lots of people who just wander and have wandered for years, I know them from having seen them over the years who just come to see what’s growing they had gardens when they were young or their parents had gardens they know about gardening but they don’t garden now, so they love to come here…

Grace also discussed how she would interact regularly with non-members from the community explaining, “…usually when I am here somebody walks by and says hello and we might have a little chat”. Another gardener, Sandra, found occasionally she got along better with people from the neighbourhood than with fellow garden members. Being attached to a public park and maintaining a welcoming atmosphere allowed garden members at Cottonwood to play an important role in the outside community facilitating community engagement.

Study participants were asked whether they felt belonging to a community garden had strengthened their ties to the Strathcona neighbourhood. The answers to this question varied. For the most part, garden members living in the neighbourhood did not feel community gardening itself connected them to the area, but felt it played a role in building community connections. Grace explained how community gardening had allowed her to become more active in the community but felt it was only one of many things tying her to this neighbourhood stating, “…I feel connected to my hood in lots of little ways and I have family here”. Other participants who had moved away from the Strathcona neighbourhood felt community gardening membership helped maintain a prior connection to the area. James, Dave and Ryan all discussed how membership at Cottonwood Community Garden had helped to preserve previously established connections with the east end. Dave explained how gardening membership helped his partner, Ryan and himself stay tied to the area stating:

We used to live here just 5 blocks away so we kind of know the neighbourhood and feel a little connected already so that kind of adds to it we know people at the Strathcona gardens, we know neighbours still in the area so I guess you could say it sort of maintained that sort of connection to this neighbourhood and that’s why we also, we didn’t blink for an instant, everybody else that we talked about getting the garden
here ‘while everything will be stolen you know that’s a crappy neighbourhood’ and it’s like, no it’s lovely here...

The majority of participants who did not live in or near the east end felt a connection to Cottonwood Community Garden. However, for the most part, they did not report feeling a strong connection to the larger Strathcona community as the primary reason they came to the neighbourhood was to garden. The only contact they had with people from the surrounding area were informal social interactions with community members visiting the garden. Dave and Ryan also mentioned that for them community gardening had facilitated civic engagement allowing them to be part of a community project. Ryan explained, “…that’s probably the only kind of civic action that we’re engaged with at a municipal level, which is for the community, for a municipality, citizenry is probably a really good thing you know to be actively engaged in your community…”. These findings suggest community gardening membership can play an important role in strengthening ties to the community, but many other factors impact development of a sense of connection with the broader community.

4.6.2. Rejuvenating the Neighbourhood

Garden members were asked how they felt the community garden benefited the surrounding neighbourhood. The study participants collectively agreed that the garden had a positive impact on the heavily industrialized area increasing and aesthetically enhancing the neighbourhood’s green space. Many participants felt the additional green space provided by the community garden, which sits on what was once an industrial waste site, benefits the neighbourhood by providing an interesting environment to walk through, visit and enjoy. One gardener, James, discussed the benefit of added green space stating:

…people walk through the garden, we will see more people on our paths than you’ll see on the grassy parts right umm the dog walkers come through here for example. We have an Asian garden…and so Asian people will come through and say this is the first time I have seen that since I left home.

Another gardener, Grace, explained the benefit of having a unique green space like Cottonwood Community Garden:
I met some people in the garden yesterday who had just discovered it they were just walking along the track and they saw the eagle’s nest and so they were just watching the eagle and then they saw an entrance into the woods and they just kinda said ‘I wonder what’s in here’ and I met them on the path, the main path walking along and they were pretty astounded. So it is a very unique, special green space.

 Debby also found the uniqueness of the garden’s large trees and lush greenery to be a beneficial attribute attracting visitors to the community garden stating, “…I mean it’s a bit like Stanley Park…it’s wild part of it is wild and you don’t find that in the city so that’s a real, I think people really appreciate it”. Many participants were proud that the garden was well used by the community, including volunteer dog walkers from the neighbouring pound. Betty discussed how much the community members appreciated having access to the garden in the following excerpt from her interview:

…I don’t know how many times every week I hear people say this is a little piece of paradise. They are so happy to walk through it they think it is beautiful, they feel it is a place where they can breathe out. There is people coming here to play music and there’s people who come and walk their dogs and walk the pound’s dogs right here and there’s lots of people who just wander…

Overall, garden members felt strongly that the community garden benefited the neighbourhood by providing an aesthetically pleasing, diverse and unique natural environment for community members to walk through and commune with nature. The addition of the garden added an interesting destination for neighbours to visit, rejuvenating the area by transforming the former dumpsite into an urban oasis.

 Some participants also discussed how the presence of the community garden had helped to improve the overall safety of the neighbourhood. One gardener, Leah, found having lots of gardeners inhabiting the public park added to the safety of the area. Similarly another gardener, Sandra, believed the community garden had improved safety in the area because gardeners were occupying and caring for the space. She explained:

…I remember 10 or 15 years ago, oh maybe it was 17 years ago now, I attended a police forum about the downtown east side here, it was at the Strathcona Community Centre and I remember speaking up and I said it because no one else was saying it and I said the way to turn this community around is to occupy it…like at the time you know we didn’t feel safe outside at night but you know if you make it safe for the residents to be outside any time of day, if you make it safe for people to inhabit public
space they will inhabit it and the people who don’t want to be seen doing whatever they are doing will find a place to hide to do what they need to do…they own that space you know and they take care of it and you can see it is a nice block and the next block where nobody cares about it, it seems worse, so I think just the fact that this place is cared for makes it a nice little oasis…

These findings are similar to previous research, which has found cared for space tends to reduce anti-social behaviour (Blomley, 2004). However, not all garden members felt the community garden improved community safety. One gardener, Dave, felt the density of some of the garden’s areas might create a safety issue in itself stating:

…I think safety is a big issue for the community and I think once you enter into a dense darkened area it’s kind of like eww you know, for a woman out walking her dog or just alone even worse I suppose to come through here would probably be more challenging I would suspect for that safety issue because there is little places for people to hide and there’s always that threat and fear of whatever.

Some of the older female gardeners also discussed being frightened to go into the more dense sections of the garden if they were alone or if it was after dusk. Gwen, explained that she always kept a cell phone with her while gardening and avoided entering the older section of the garden when other gardeners were not present. Although the majority of gardeners felt safe at Cottonwood, because of its large size, they were seldom there alone.

4.6.3. Problems with the Public

Theft and vandalism are common challenges associated with urban community gardens (University of Missouri Extension, n.d.). Many of the garden members at Cottonwood Community Garden discussed having difficulty with both issues. In addition, garden members also mentioned challenges associated with homelessness, drug abuse, prostitution and individuals disregarding the garden’s rules of conduct. The location of Cottonwood Community Garden in East Vancouver seemed to intensify these problems with the public due to the garden’s close proximity to low income housing and the high prevalence of substance abuse and prostitution in the area. Theft seemed to pose the biggest challenge, frustrating many of the study participants. One gardener, Sandra, explained how she would rip crops, like beans, out of her garden plot if she
noticed they were attracting a high degree of theft stating, “...if I’m not getting any I rip it out”. She also explained how she tried to avoid theft by choosing crops that appeared to be visually unattractive explaining, “you grow lovely round tomatoes and they go missing, you grow the black ones and maybe you get them”. Similarly, Debby also found the amount of theft and vandalism in the garden frustrating stating that there was a “huge amount. It’s a pain”. Another gardener, Darlene, discussed issues of drug abuse and homelessness explaining, “unfortunately we do have people turning tricks in the garden at night, we have drugs, we have people sleeping and camping out”. One female garden member, Betty, described how she had previously been involved in fights with individuals she believed were under the influence of drugs or alcohol stating:

...I’ve been in a couple of fights with people, my fault you know, who stepped on my plants, people who were drunk or drugged or something and they got very angry back and I was scared I was going to get beaten up but that you know I didn’t have to push it like that.

Other conflicts with the public involved people allowing their off leash dogs to walk through or dig up the gardeners’ individual plots or common beds. Some participants discussed having verbal altercations with people not respecting the garden’s boundaries by straying off the pathways and walking through or damaging planted areas. Overall, study participants felt these challenges were relatively minor inconveniences common to the majority of community gardens. A few garden members were even sympathetic, believing some theft was ok if the people taking the produce were hungry and in need of healthy sustenance.

4.7. Ethnographic Observations

Observations were conducted at Cottonwood Community Garden over a four month period. The purpose of those observations was to validate the interview data by observing the study participants during their regular gardening practices and participation in formal group activities. Ethnographic observations allowed the researcher to gain a deeper understanding of the social milieu existing within Cottonwood Community Garden. After conducting analysis of the fieldnotes, the main concepts arising from this data were compared with the emergent themes and codes
from the in-depth interviews. In general, the observational data supported the interview data with very little variation, confirming the participants’ perceptions of their community gardening experience were a good representation of what the researcher observed taking place within the garden environment. In the following section, observations documented in the researcher’s fieldnotes regarding the garden members’ social interactions will be discussed.

First, the social interactions taking place during participants’ regular gardening activities will be addressed. During an average visit to the garden, moderate levels of social interaction between garden members was observed. When gardeners arrived at the garden alone, they generally worked solely on their individual plot or ongoing task in one of the garden’s common areas. However, brief informal social interactions were frequently observed between garden members and between members and non-members walking through the garden. There were some occasions where two or more participants would run into each other in the garden and carry on a friendly conversation ranging in length from 5 to 30 minutes. The topic of conversation was generally garden related such as issues regarding theft or vandalism in the garden or the state of the common areas, but there were some circumstances in which the participants discussed social and/or personal issues. For example, I witnessed one lengthy conversation between Debby and Grace in which they began speaking about the availability of bike lanes in the Vancouver area, but eventually branched into a discussion of their personal histories including where they were married. This observation is similar to what was reported by participants during their interviews, in which they stated the majority of conversation was centered around the garden, but occasionally branched out to include personal life stories and discussions of recent life events or relevant social issues.

The majority of the social interactions observed during regular gardening visits occurred between partners and close friends. Many of the study participants gardened regularly with a family member or friend with whom they would socialize while gardening. During the observation periods, partnering between individuals with close ties and similar social backgrounds was regularly witnessed. These interactions were examples of bonding social capital, which was commonly discussed in the participant interviews. An example of bonding social capital is depicted in the following excerpt taken during
observations with two study participants, Ryan and Dave who live and regularly garden together:

They showed me both of their garden plots and we discussed the different crops that were growing in each. During these observations we talked about how gardening brings out their creativity and how they noticed a significant change in their eating habits since becoming garden members. They used to largely eat meat but now eat mostly vegetarian meals and have cut down to only eating meat twice a week. They told me that they are much more likely to eat vegetables because things taste better when they are grown by yourself. They were very proud of their garden and the produce it provides them. Both Ryan and Dave were happy to spend time together taking part in a shared activity that was also healthy and gave back to the environment. –Fieldnotes

The above excerpt also provides an example of the participants' interest in eating well and the sense of satisfaction they received from growing their own produce, which were themes prevalent in the interview data.

Examples of bridging and linking social capital were also observed but less frequently. The following excerpt from the fieldnotes portrays an example of both bridging and linking social capital:

The weather today was rather cold, cloudy and wet and there were not many people in the garden. I witnessed one woman walk through with her dog. There was also a dishevelled looking man with a bike sitting in the garden who was talking to himself as I walked by with Grace he started to ramble incoherently at us and we politely acknowledged him. There appears to be a number of homeless or street people who use the garden as a refuge…there were brief social interactions between Grace and two men who appeared to be street people. She politely spoke to both of them but the interaction was informal and did not seem meaningful. Then I witnessed Grace and Debby have a conversation about the level of theft that was taking place in the garden and watched them leave the garden together to grab some lunch. –Fieldnotes

This excerpt describes a very informal social interaction taking place between one of the study participants, Grace, and two men from very different social backgrounds providing an example of linking social capital. There is also an example of bridging social capital within the excerpt, as Grace and Debby, who claimed not to be close friends, engaged in a pleasant conversation and decided to go for lunch together. Similar to what was found during the interviews, the observations demonstrated that bonding social capital was
most common within Cottonwood, but bridging and linking social capital developed as well.

In addition to the observations documented during the gardeners’ regular activities, the garden’s scheduled group activities were also observed. These activities included the monthly work parties, general meetings and the annual ‘Friends and Family Day’. During these group activities, more frequent social interaction was observed verifying their influence on social engagement. Attending these activities allowed the researcher to observe how garden members worked together to care for the large common spaces and how gardeners of different ages communicated with one another. During the work parties, I observed several study participants take on a great deal of responsibility. The older gardeners were largely in charge of organizing who would help with what task, while also actively participating in the manual labour. The following example taken from the fieldnotes, portrays the leadership roles of the older adults and illustrates how gardeners of all ages work together to maintain the garden:

During the work party I observed Grace, Debby, Darlene, James and Betty at work doing their respective tasks. They all worked extremely hard and were very actively involved at least as much if not more than the younger gardeners. When it comes to getting work done in the garden the older members definitely play an important role. Betty guided and instructed a group of younger female garden members, who appeared to be in their early twenties, and completed her fair share of weeding. Grace and Debby were actively involved in assigning tasks and organizing the work party as well as actively contributing. Darlene and James were responsible for a huge portion of the common area and did a great deal of work during the work party as I frequently saw them with full wheelbarrows. The older members are definitely vital to the success of the garden and are leaders. While most people were hard at work I did notice people taking occasional breaks and chatting with other members in the shade. —Fieldnotes

The observation of older garden members as hard workers and leaders was also expressed in the interview data, as discussed earlier. The highest level of social interaction was witnessed during the potlucks prior to the garden’s general meetings. During this time, garden members share dishes of healthy food and chat casually for approximately 30-45 minutes prior to the meeting. This seemed to be a very relaxed social setting where much informal interaction took place. All ages were present during the potluck, but it was observed that younger members tended to group together,
However mixed ages were interacting to some extent. It was not clear whether these interactions led to the development of meaningful friendships between garden members, but a strong social component was evident. During the garden’s meetings, the older garden members again took on leadership roles often voicing their opinions. While some participants discussed how the meetings were becoming cumbersome and too political during the interviews, the older members appeared to be engaged and actively involved in the process, arguably being the most vocal members. The garden members made a concerted effort to run the meetings democratically. Although there were frequently differences of opinion, those appeared to be handled amicably.

Finally, the garden’s annual ‘Friends and Family Day’ was attended to observe how effectively the garden was able to engage the surrounding community. This formal group activity was a good example of both social capital, defined as “the ability of people to work together for common purposes in groups and organizations” and community engagement (Fukuyama, 1995, p. 10). The following excerpt portrays the interactions taking place throughout this community event:

As I arrived there were many garden members present of all ages putting the final touches on the garden set up. They had many colourful signs throughout the garden, different tables set up, lots of food, a raffle, plant sale and children’s section with musical entertainment and face painting. I immediately noticed Grace, Gwen, Darlene, Ryan, Dave, and Betty were present in the garden…I decided to attend a short workshop on organic composting being demonstrated by one of the younger garden members. This was very informative and great for community members interested in using the garden’s compost. Many of the workshops were designed to teach the public about the garden but also sustainable living. People were asking questions and seemed to find the workshop helpful. Gwen was helping to run the food table, while Ryan and Dave were in charge of the fundraising and raffle. They were very busy interacting with a large number of people. I then joined a garden tour being given by Grace. There were approximately 12 women in the tour, most of whom were not garden members and some appeared to be over the age of 60. There seemed to be some genuine interest in the garden and the plants/trees present. I spoke with one older woman in the tour who said she lived nearby and often would walk through the garden….as we went through the garden I noticed Grace had to move slowly in certain sections and she used a long piece of bamboo as a walking stick. As she concluded the tour she spoke about the accessible expansion and showed everyone her raised gardening plots. She explained the importance of having these plots for herself and other older individuals. —Fieldnotes
This example illustrates how the garden members, many of them study participants, had to come together and work as a cohesive group to fulfill one common purpose. ‘Friends and Family Day’ appeared to successfully unite the community, mutually benefiting the garden, its members and the surrounding neighbourhood. This observation supports what was reported by study participants during the interviews. Older garden members were proud of their work in Cottonwood Garden and enjoyed seeing the space used by the wider community.
5. Discussion

This chapter will highlight the key findings from this study focusing on their significance in the context of aging and community life. The interview and observational data collected in this qualitative case study of Cottonwood Community Garden emphasize the significant influence community gardening participation can have on the overall well-being of urban dwelling older adults and directly address the study's research questions: 1) How does participation in community gardening influence quality of life in older adults? and 2) In what ways does participation in community gardening projects facilitate social engagement among older adults? Study participants believed community gardening was vital to their overall health and well-being, improving their subjective quality of life in the following ways: maintaining a healthy diet; staying active; providing mental restoration and relaxation; creative outlet; communing with nature; providing satisfying work and meaningful occupation; facilitating human contact; allowing opportunities to make intergenerational connections; community building and environmental improvements. Community gardens also provided a supportive environment conducive to older adults cultivating social and civic engagement.

Older adults participating in this study maintained healthy lifestyles by regularly engaging in beneficial outdoor activity. Community gardening enabled them to meet their physical activity needs. Commonly, community dwelling older adults are unable to fulfill this need leading to high levels of inactivity (Ashe et al., 2009; Rantakokko et al., 2010). As regular participation in leisure activity is associated with significant health improvements, this finding has important implications for supporting active aging and aging in place (Ashe et al., 2009; Bertera, 2003; Haley & Andel, 2010). The study findings also suggest older gardeners benefit from spending time outdoors connecting with nature. Gardening provided the study participants with an escape from urban living, which was associated with greater relaxation, stress reduction and improved mood. These findings are significant, as research shows older adults are vulnerable to cognitive decline, depression and attention fatigue (Jansen & Von Sadovszky, 2004). The
findings identify community gardening as a meaningful occupation for the majority of the retired study participants. Community gardening allowed the older garden members to invest a significant amount of time in caring for something they felt contributed to the betterment of their neighbourhood and the natural environment. Participants reported being actively engaged in ‘real work’, which provided fulfillment, purpose and satisfaction. Maintaining meaningful occupation and giving back to society are crucial components of well-being and are especially important in later life as many older adults feel removed from their community experiencing some form of civic exclusion after retirement (Middling et al., 2011). Older adults also benefitted from the sense of belonging to the community garden and the opportunity to interact with a variety of individuals with varying social backgrounds and ages. Participants strongly believed these benefits positively influenced their overall quality of life.

While social interaction was not the primary reason older members joined the community garden, many participants discussed the benefits of building meaningful social relationships with fellow gardeners. Garden members clearly indicated that they did not go to the garden to socialize; however, they recognized that the social support provided in the garden was an important by-product of gardening participation and valued the opportunity to have access to this support, if needed in the future. The study findings suggest this social support may be more important to childless older adults or individuals with weak family ties. Some participants noted that if they did not have well established social networks of family and friends, they could envision themselves relying more heavily on the social support provided in the garden environment. Even those older adults with strong social networks outside of the garden valued the friendships and informal interactions facilitated by gardening participation. The intergenerational connections made within the garden also seemed to be more meaningful for older adults without children of their own. While intergenerational relationships were not specifically sought after by garden members, many valued being in a social environment where all ages worked together to ensure the maintenance of the community garden and the success of its community events.

Maintaining the garden was a communal effort with the older garden members often taking on leadership roles and substantial volunteer commitments. Study participants noted that the older gardeners were more available and had fewer demands
on their time allowing them to take on more active roles in the garden. Some participants felt age was not emphasized in the garden environment as everyone did their part irrespective of their chronological age. Community gardeners of all ages and backgrounds shared a common bond and love for the community garden and the activity of gardening. This bond helped to unite garden members improving social cohesion and facilitated intergenerational contact. These findings are noteworthy as group membership individually benefits older adults in many ways including: assistance with manual labour; knowledge exchange; sharing of resources; improved inter-personal skills; and companionship. These individual benefits combined with an accessible gardening environment were found to prolong gardening participation allowing older adults to maintain their involvement regardless of their functional ability. This is important, as a combination of physical and/or cognitive decline and environmental barriers are a major cause of inactivity and social exclusion in later life (Rantakokko et al., 2010; Sugiyama & Thompson, 2006; Suzuki & Murase, 2010).

Evidence of social capital was found to be present within Cottonwood Community Garden. The older garden members had access to social capital, which allowed them to maintain and care for the garden successfully as a group. Bonds were formed between garden members resulting in reciprocal relationships. Older gardeners reported both receiving and giving assistance, and benefitting individually from group membership. While Glover (2004) reported that social capital is not always equally accessible leaving some members detached from the group, this inequality was not reported by the older members of Cottonwood Garden. On the contrary, older adults recognized the important leadership roles they maintained in the group and did not consider themselves as fringe members. Older gardeners perceived that they were valued for their work ethic, the time they were able to invest in the garden, their gardening knowledge, life experience and historical reference. Community gardens provide the opportunity for older adults to remain valued members of their community.

Findings from this study can be linked to the following aging theories: Continuity Theory and Socioemotional Selectivity Theory. Continuity Theory supports the idea that individuals seek out stability and continuity throughout the life course as an adaptive strategy to combat age related changes (Nimrod & Kleiber, 2007). Maintaining external continuity, “the roles and activities of the physical and social environment” can help older
adults maintain internal continuity, “different psycho-logical characteristics, mainly the ‘self’ and the ‘identity’” (Nimrod & Kleiber, 2007, p. 2). Maintaining continuity and a sense of self becomes more critical as one ages and can serve as a coping strategy against age related decline while boosting competence and self-esteem (Nimrod & Kleiber, 2007; Troll & Skaff, 1997). A study by Agahi, Ahacic and Parker (2006) found participation in leisure activity in later life was often a continuation of earlier participation. The majority of the participants in this study had gardened throughout their life course and hoped to continue participation late into old age by making adaptations to both their levels of participation and the physical environment. They found community gardening participation provided them with the opportunity to maintain their physical activity needs, engage in meaningful occupation, preserve a life-long connection with nature and express themselves creatively. This continuity in leisure activity allowed participants to remain engaged in their community and supported their overall quality of life despite age related changes, such as retirement and the onset of chronic disease.

The Socioemotional Selectivity Theory also looks at rates of participation in later life. This theory posits that “reduced rates of interaction in late life are viewed as the result of lifelong selection processes by which people strategically and adaptively cultivate their social networks to maximize social and emotional gains and minimize social and emotional risks” (Carstensen, 1992, p. 331). This theory supports the idea that social interaction remains consistent over the life course but “with increasing age, perceived limitations on time lead to re-organizations of goal hierarchies such that goals related to deriving emotional meaning from life are prioritized over goals that maximize long-term payoffs” (Lockenhoff & Carstensen, 2004, p. 1396). When there are no perceived time constraints individuals tend to be drawn to future-oriented goals that are aimed at acquiring knowledge, self-actualization, expanding social networks and healthy living but when time is seen as limited, focus is shifted to present-oriented goals that maximize meaning and generally involve interacting with close family and friends (Lockenhoff & Carstensen, 2004). Hendricks and Cutler (2004) used Socioemotional Selectivity Theory to look at volunteerism in later life and found volunteer activities slowly increased throughout middle-age stabilizing in old age, suggesting there is a relationship between volunteerism and soicoemotional selectivity. Based on the findings from this study community gardening can be seen as a life long activity that has both future-
oriented and present-oriented goals. Participants found community gardening participation was good for their physical and psychological health, offered opportunities to learn and meet new individuals, while also being a meaningful activity that had emotional significance in their lives and often involved bonding between close friends and family. This suggests community gardening membership can be beneficial for individuals regardless of their stage in the life course. It also helps to explain why older adults in this study made community gardening a growing priority in their lives hoping to dedicate more time to volunteer work in the garden as they aged. Community gardening proved to be an emotionally meaningful activity for older gardeners.

In addition to its theoretical implications, this study expands on previous literature confirming that many of the reported benefits of community gardening participation are attainable for older garden members. In some cases, the benefits of participation are magnified for older adults significantly improving their overall quality of life by deterring many chronic diseases associated with inactivity and reducing social and civic isolation experienced by many urban dwelling older adults. Community gardening participation can be effectively maintained well into advanced old age providing a beneficial therapeutic activity that can be enjoyed throughout the life course.

5.1. Implications for Practice

An underlying purpose of this study was to bring awareness to the benefits of community gardening participation in later life. The findings suggest community gardens are cost effective ways to cultivate community building and make improvements to older adults’ overall health and well-being supporting quality of life. This is significant because “with the increase in urbanization individuals have less contact with nature and feel less safe, less satisfied and less socially involved with their neighbourhood” (Kingsley, Townsend & Henderson-Wilson, 2009, p. 215). In today’s individualistic society, lack of social cohesion is common making community building of increased importance. Community gardens should be incorporated into city planning guidelines in order to provide neighbours green space to gather. According to the World Health Organization (2007), outdoor environments have a considerable impact on the independence of older
adults influencing their ability to age in place within their communities. With the percentage of older adults in the global population steadily increasing, emphasis should be placed on preventing premature relocation from the home to an institution. Providing easily accessible community gardens in all urban communities would positively impact the health and well-being of urban dwelling older adults who may be particularly vulnerable to social and civic exclusion. The placement of accessible community gardens in areas with high senior populations should be seriously considered by city planners. Accessible community gardens not only benefit older adults, but improve the walkability of the community for all individuals and allow inclusion of persons with disabilities. Participants in this study felt that accessible gardening environments were vital in prolonging gardening participation.

Community gardens are particularly beneficial in heavily industrialized or disadvantaged neighbourhoods where they can help rejuvenate decaying environments boosting safety and allowing residents to take ownership of the public spaces in their community. Replacing vacant lots or industrial waste sites with urban gardens can reduce crime and increase property values (University of Missouri, n.d.). Many older adults live in lower income neighbourhoods lacking destinations of interest. Inclusion of a community garden can act as a social gathering place providing a walking destination. The restoration of urban spaces is also associated with increased socialization and strengthened ties to the community (Semenza et al., 2006). Urban community gardens also provide a practical purpose allowing residents to produce large quantities of organic fruits and vegetables. Participants in this study associated the availability of high quality organic produce with improved overall health and subjective quality of life. Research shows community gardens can have significant environmental impacts as well by reducing carbon dioxide emissions by locally growing food, increasing biodiversity, teaching sustainability and reducing food waste through composting (Okvat & Zautra, 2011). Therefore, community gardens can be viewed as investments in our future. They benefit a wide variety of individuals from diverse cultural and socio-demographic backgrounds, improve the environment and provide places of social support and meaningful occupation for older adults. Community gardens can also be used as places of education and formal mentoring, facilitating intergenerational contact. Participants from this study felt Cottonwood Community Garden provided an aesthetically pleasing
environment that was well used by the wider community. They felt the garden benefitted the surrounding neighbourhood by increasing green space and improving walkability, reducing waste through composting, adding to the biodiversity of the area and providing educational workshops to community members.

Community-based organizations such as neighbourhood houses and seniors advocacy groups and provincial health and wellness programs such as Age-friendly BC and Act Now BC should consider partnering with local community gardens to increase the percentage of older adults participating in community gardening projects and provide education on the health and wellness benefits of garden membership across the life course. Metro Vancouver has a relatively mild climate compared to other parts of Canada making community gardening a physically and psychologically beneficial outdoor activity that can be enjoyed year round by persons of all ages and abilities. Older community gardeners from this study reported that community gardening participation had a positive influence on their physical and mental health, daily diet, and increased their degree of social interaction and engagement in a community project. Community gardening provided meaningful occupation fulfilling the participants need for challenging and rewarding work. Many community gardens, like Cottonwood Community Garden, are run by non-profit organizations which support numerous community events and workshops and require a considerable investment from those volunteering to sit on their board of directors. Study participants found these positions to be ideal volunteer opportunities for older adults as they facilitated social and civic engagement and helped bring awareness to social issues impacting their community. Seniors centres, seniors advocacy groups and provincial health and wellness programs should encourage older adults to take on active roles in community gardens to promote active aging. These organizations should also support the use of community gardens by older adults with physical and/or cognitive disabilities by organizing supportive gardening groups within accessible community gardens and coordinating transportation and/or physical assistance. This may help reduce social isolation and civic exclusion for older individuals who otherwise would have difficulty leaving their home and participating in community based projects. Adult Day Programs, Assisted Living and Residential Care Facilities may also benefit from reserving plots within accessible gardens and incorporating community gardening into their monthly activity schedules. Partnerships
between community gardens and community based organizations and groups may also help strengthen social cohesion in a given neighbourhood and enhance social capital.

Study participants also discussed the benefit of interacting with younger generations within Cottonwood Community Garden and many enjoyed gardening with family members. Provincial programs such as Healthy Families BC and non-profit organizations and groups such as The Environmental Youth Alliance could incorporate formal mentoring programs within designated community gardens to help foster intergenerational relations and educate youth on sustainable gardening practices, biodiversity, and healthy eating habits. Local school boards and municipalities could also support educational programs introducing young students to gardening by utilizing older volunteers from community gardens to provide guidance and skills training. Participants in this study felt their community garden could benefit from increasing the presence of families and younger adults. Mentoring and educational programs would bring awareness to gardening activities and potentially boost the availability of intergenerational contact within urban community gardens.

Older gardeners from Cottonwood Community Garden enjoyed growing and consuming their own produce, which they believed was of better quality compared to store bought vegetables. Having direct access to fresh, organic and affordable produce equated financial savings for some participants and fostered a sense of pride and accomplishment. Older adults in this study had a significant interest in producing local organic produce which could be developed into employment opportunities for gardeners of all ages through the formation of or partnership with farmer’s markets and food co-ops. Selling produce, seeds and plants can produce revenue for individual gardeners or the community garden as a whole depending on the garden’s polices, while connecting gardeners with individuals from the larger community and encouraging residents to eat locally. A study by Thompson, Corkery and Judd, reported that community gardens found in disadvantaged neighbourhoods throughout Australia were a “cost effective strategy for community renewal, empowerment and capacity building” (2007, p. 170).

In order to raise awareness and understanding in regards to the importance of community gardening projects, a plan to aid knowledge translation has been incorporated into this study. An easily understandable summary of the study findings
highlighting the benefits of community gardening for urban dwelling older adults will be distributed to local government agencies to advocate for accessible community gardens. Local governments play an important role in enabling the continued growth of community gardening projects: “by removing policy barriers; enacting supportive policies; providing support related to water access, land tenure, and composting; by signalling their support of community gardens in government communications; and by dedicating staff time to interact with community gardening groups” (Barbolet, 2009, p. 4). It is hoped that this report will help grow funding opportunities and support from local and provincial governments for community gardening projects. Allocating more resources and continued funding for community gardens will allow for the development of accessible gardening environments. Members of Cottonwood Community Garden believed accessible gardens would prolong gardening participation for many older adults.

5.2. Limitations and Future Research

This research was based on a case study of a single community garden. Including multiple study sites would allow the exploration of these issues in the context of diverse socio-physical contexts. The majority of this study’s participants were Caucasian and middle-class, which limits the transferability of the study findings. Incorporating a larger number of study participants from multiple community garden sites would increase the variability of participants and bring potentially diverse insight into the perspectives of older adults from different socio-cultural backgrounds. While community gardeners with a variety of functional abilities and ages were selected in this study, there were no participants over the age of 80 years. Therefore, the subjective experiences of the oldest-old were not obtained. Another reality of the study was the uniqueness of Cottonwood Community Garden. Cottonwood Garden is a very large garden including expansive common spaces, which are maintained collectively. The garden also boasts a large accessible expansion. These features are not common among all community gardens and may influence the dependability of the study. The study site is also one of the oldest community gardens in the City of Vancouver and is well established in the Strathcona neighbourhood, which needs to be considered in interpreting the study
findings. The size, age and location of the community garden may have influenced the level of social engagement and social cohesion.

There is a need for additional research focusing on community gardening experiences of older adults to deepen our understanding of the role of this community resource on various aspects of older adults’ quality of life. Community gardening is particularly beneficial for older adults and has the potential to prolong gardening participation. Studies should also focus on including larger sample sizes, ethnic minorities, older adults from different socio-economic backgrounds and with different levels of health status. More research is needed exploring the social benefits of community gardening participation. Older adults appear to benefit from social interactions and the availability of companionship found in community gardens, but not enough is known about the impact of these social relationships on the quality of life of older adults. Also, it would be important to have purposive/theoretically based sampling for study participants. For example, a study with older gardeners who live alone may highlight the significance of the social relations in a community garden. Other focused areas are the importance of intergenerational connections and the quality of social support available for those in need. Also, research examining the likelihood of community gardening participation to influence civic involvement in other aspects of community life would be useful. Finally, quantitative research assessing the impact of community gardening membership on quality of life outcomes would provide additional empirical data.

5.3. Conclusion

This research study explored the community gardening experiences of urban dwelling older adults, to gain a deeper understanding of the impact gardening participation had on their subjective quality of life. The study aimed to better explain the relationship between community gardening and social and civic engagement in later life, and to ascertain whether older community gardeners benefit from social capital. Existing research in this area has highlighted the health benefits of community gardening for younger and middle aged adults; however, very few studies have emphasized the potential benefits for adults over the age of fifty years. The findings from this study
indicate that the reported physical, psychological and social benefits of community gardening participation are also experienced by older gardeners, and in many cases, are magnified for this group. These findings are significant, as they suggest involvement in community gardening is associated with improvements in overall health and well-being by providing meaningful occupation, an engaging environment to learn and develop new skills, and increased opportunity for social interaction and support.

According to the City of Vancouver (2011), community gardens are “a powerful tool to achieve multiple social, environmental and economic benefits”. As the study findings suggest, urban gardens are ideal community projects that rejuvenate decaying neighbourhoods and improve walkability, facilitate social engagement and intergenerational contact, and support sustainable food production. Despite the recent positive attention garnered by community gardening projects, there continues to be a shortage of accessible gardening plots in the City of Vancouver, resulting in significant wait lists. Hopefully, progress will continue to be made to increase public support for accessible community gardens in light of their important role in maintaining an active lifestyle for many urban dwelling older adults. It is increasingly necessary to reduce environmental barriers and provide age-friendly outdoor spaces, in order to facilitate active aging. As stated by the World Health Organization, “making cities more age-friendly is a necessary and logical response to promote the well-being and contributions of older urban residents and keep cities thriving” (2007, p. 4). Community gardens should be an important feature of any age-friendly city in order to provide necessary occupation, opportunity for social and civic engagement and support quality of life in older adults.
References


Appendix A.

Interview Guide

Garden Membership:
How long have you been a community garden member?
How often do you visit the garden in an average week during the Spring and Summer months?
How long is an average visit?
What motivated you to become a member?
Do you have the space to garden privately at your home?
Have you always been a gardener?
What do you enjoy most about gardening?
How does gardening impact your physical and mental health?
Do you live in this neighbourhood?
If yes, do you feel joining the garden has strengthened your ties to this community?
If no, in what general area do you live?
Why did you decide to commute to this garden?

Social Interactions:
Do you typically garden alone or with a friend or family member?
Do you feel belonging to a community garden has increased your social network and/or allowed you to meet new people?
If yes, how many people would you say you interact with socially during an average visit to the garden?
Is the topic of discussion during these interactions typically garden related or will you also discuss other topics or personal stories?
Have you formed many meaningful friendships with fellow gardeners?
If yes, how important are the relationships you have formed in regards to your quality of life?
Do you socially interact with other gardeners outside of the community gardens?
If so, how often?
What type of other activities do you do together?
Do you keep in touch year round?
In your opinion does community gardening provide a good opportunity to interact with younger adults and build intergenerational contacts?
Could the design or layout of the garden be different to help increase the opportunity to interact with other garden members?
**Group Membership:**
Do you think there is a social benefit to the group activities, such as the ‘work parties’ and ‘family & friends day’?
If so, why?
In what ways do you contribute to the group? (What specific tasks are assigned to you?)
In what ways if any does group membership benefit you as an individual? (Do you receive any help?)
Do you feel a sense of community exists within the garden?
Do you feel older members play an important role in the garden community?
If not, why?
How do you feel this community garden benefits the surrounding neighbourhood?

**Supportive Environment:**
Do you have any health related problems, which make gardening difficult for you?
Do you use any of the accessible features available within the garden such as, raised gardening beds and water taps?
If so, how do they benefit you?
In your opinion, do you feel having these features will allow more older adults to join community gardens?
Do you feel the availability of this support will allow you to continue gardening longer than if you were gardening independently within your home?
Is there anything you would change about the gardens to make them more accessible?

**Other:**
What are the most positive aspects of your community gardening experience?
Why (can you elaborate)?
What are some of the challenges of community gardening membership?
What is your incentive to stay involved in the community garden in the future?
Compared to other activities in your life how important is gardening to your overall well-being? Where would it rate in importance?
Is community gardening your main source of social interaction with people in the community? If no, what is?
Do you think community gardening will have more or less importance to you as you age?
Is there anything else you would like to say about your involvement in this community garden?
Appendix B.

Socio-Demographic Questionnaire

1) What is your age range?

[ ] 50-55 years  [ ] 56-60 years  [ ] 61-65 years
[ ] 66-70 years  [ ] 71-75 years  [ ] 76-80 years
[ ] 81-85 years  [ ] 86-90 years
[ ] 91-95 years  [ ] 95+

2) What is your gender?

[ ] Male  [ ] Female

3) What is your current living situation?

[ ] Live alone  [ ] Live with spouse/partner
[ ] Live with spouse/partner and adult children
[ ] Live with adult children  [ ] Live with other family or friends

4) What is the highest level of education you have completed?

[ ] Elementary School (Up to grade 7)
[ ] High School (Up to grade 12)
[ ] Some college/technical training
[ ] Completed college or university degree
[ ] Completed graduate degree (Masters/Doctorate/Post-doc)
5) What is your current employment status?
[ ] Unemployed [ ] Employed part-time
[ ] Employed full-time [ ] Retired

6) What is your total household income?
[ ] No Income
[ ] Less than $20,000 per year
[ ] Between $20,000-$39,999 per year
[ ] Between $40,000-$59,999 per year
[ ] Between $60,000-$79,999 per year
[ ] Over $80,000 per year

7) How would you rate your health in general?
[ ] Excellent [ ] Very good
[ ] Good [ ] Fair
[ ] Poor [ ] Very poor
Appendix C.

Informed Consent

Title of Study:
The Role of Community Gardens in Supporting Quality of Life in Urban Dwelling Older Adults

Description of the Study:
This study is being conducted by Kimberly Mckercher, a Master of Arts Candidate within the Gerontology Department at Simon Fraser University. Simon Fraser University and the researcher conducting this study, subscribe to the ethical conduct of research and to the protection and safety of the study participants. This research study is being conducted under the authorization of the Simon Fraser Research Ethics Board.

The purpose of this study is to explore the nature and quality of social relationships existing between community garden members, and to gain a better understanding of the significance of these relationships in the everyday lives of older gardeners. The objective of this study is to gain an in-depth look at the social interactions taking place within community gardens and the subsequent impact these interactions may have on the lives of older adults and the well-being of the overall community.

Ten to twelve garden members from Cottonwood Community Garden will be invited to participate in this study. Data collection will consist of in-depth interviews and observations with participating garden members 50 years or older.

If you agree to take part in this study this is what you can expect:

1) You will be asked to take part in a face-to-face interview, which will be digitally audio recorded and last approximately 60 minutes. Questions asked during the interview will focus on social interactions, community engagement, and accessible gardening environments. The study’s findings will be used to further the knowledge in this topic area and depict the unique experiences of older community gardeners.

2) You will be included within the field observations, which will take place over a three-month period. You will be asked to participate in at least one two-hour observation period during your regular gardening activities, which will be scheduled at your convenience. Data collected from the observations will be used to document the diversity of social interactions taking place within the community gardens on a daily basis.

3) You will be asked to consent to a photograph being taken of yourself working in your garden plot, which may be used in reports and presentations.

Participation in this study is completely voluntary and you have the right to refuse to participate in any portion of the study or withdrawal from the study at any time without suffering any negative consequences. To ensure your confidentiality no real names will be used in study write-ups. All digital data (audio recordings and typed transcriptions and field notes) obtained from the study will be saved on a memory stick and securely stored with all paper files in a locked cabinet within the researcher’s home office. All data will be saved for two years after the completion of the study in the same locked filing cabinet and carefully disposed of afterwards. All information will be kept confidential and not revealed to parties outside the study.
I encourage you to ask questions at any time regarding the nature of this study. You will also be able to request research results from Kimberly Mckercher, Master of Arts Candidate, Department of Gerontology, SFU (604-880-2679 or ksm3@sfu.ca). If you have further questions or concerns you may also contact my Senior Supervisor, Dr. Habib Chaudhury, Associate Professor, Department of Gerontology, SFU (778-782-5232 or chaudhury@sfu.ca).

The SFU Office of Research Ethics has approved this research study; if you have any concerns or would like to report any complaints regarding this study (2012s0334) please contact the director, Dr. Hal Weinberg at 778-782-6593 or hal_weinberg@sfu.ca.

I have read the description of the study and understand my role as a participant. I agree to participate in the research study to be conducted by Kimberly Mckercher from Simon Fraser University.

Signature__________________________________________________________

Printed Name______________________________________________________

Date______________________________________________________________
Appendix D.

Garden Information/Policies

Cottonwood Community Garden Information for New Gardeners (2011):

Cottonwood is a community garden. Gardeners become members of the society, participate in work parties, and participate in decisions about the garden.

Our garden has 4 acres and 140 garden plots. Our new expansion is fully accessible for seniors & people with disabilities.

Cottonwood has large communal areas which include apple, plum, pear, sour cherry, persimmon, mulberry, fig, Asian pear trees; raspberries, blueberries, grapes, Kiwis, currants, gooseberries, Saskatoon berries, blackberries, cranberries; native garden; Asian garden; perennial flowers & shrubs; 8 types of bamboo; nut trees; beehives; & ornamental trees & shrubs.

Because our garden has such large common areas, we all work together to maintain these areas. Gardeners are expected to:

Attend work parties on the last Sunday of each month (July work party/2nd Saturday).

Take responsibility for one ongoing task in the garden

Keep the paths around their plot weeded and covered with bark mulch or crushed granite fines (expansion)

Work their plot by May 1, and keep their plot maintained

Work parties are on the last Sunday of each month, 10am - 4 pm (gardeners are expected to come for 4 hours). We have a potluck lunch & a meeting at 1 pm at work parties.

The July work party is on a different day - 2nd Saturday of July, 9am-4pm. This work party is very important because it helps us prepare for our Annual Open House, which is on the second Sunday in July. Please come!!

Our Annual Open House is the second Sunday in July. There’s a lot to do, so please come, help & enjoy!

There is no work party in December.

Work parties:

When you come to a work party, please start by working on your ongoing task.

If you are finished with your ongoing task, please go to the kiosk & look at the board that has lists of what to do at the work party. Please mark your initials by what you’ve chosen to do, so others will know who’s working on what.

If you have ideas about work at a work party, please write this on the board or email cottonwoodgarden@gmail.com

There’s a potluck at 1pm at work parties, so please bring food, plates & cutlery! We also usually have a meeting if there’s stuff to be decided. Please make sure you sign-in on the list at the meeting.

We have a tool shed with tools that gardeners are welcome to use, and a greenhouse that gardeners may also use. Please ensure that any tools you use are cleaned, dry & put in the right place when you return them to the tool shed.

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After a new gardener has been assigned a plot and has signed the membership contract, the plot team will give you the combination for the tool shed & greenhouse. It's important not to give this combination to anyone else, no matter how trustworthy they are. The combination is only given to members for security reasons. If you want someone to help with your plot, please ensure the person is registered with the Plot Team.

There are free manure, compost, wood chips & leaves that gardeners are welcome to use. If you’re using compost for your own plot, please use the compost on the track or in the driveway – the compost in our compost bins is for common areas only.

Composting: you can compost your garden waste in two ways:

You can have your own compost bin on your plot for your own use

Communal compost bins (near the driveway). You can put uninfected non-weed garden waste into the communal bins. This compost is for communal areas only, due to limited supply. Communal compost can’t be used on your plot.

Invasive weeds or infected stuff goes in the weed area at the western edge of the expansion by the track. Please do NOT put logs, wood, branches, twigs or non-organic material in the weed area. Please place weeds close to the track side, so it’s easy for the Park Board to pick-up.

Please respect other gardeners’ plots/task areas. Please don’t work in someone else’s plot/work area without their permission.

Unwanted plants:

If you’re a new gardener and there are shrubs or plants in your plot you don’t want, please temporarily plant them in the north side of the driveway. This allows other gardeners to chose & take care of the plant.

Plot renewals are done at fall work parties for the next year – at the September, October & November work parties. You must renew your plot at one of these three work parties if you wish to garden for the next year. We do not do plot renewals at any other time and we don’t do registrations by mail. Please ensure that you register your plot at one of these 3 work parties.

If a gardener does not wish to renew their plot, please notify the plot team as soon as possible. We have people waiting for plots, so it’s important to let the plot team know if you don’t want to renew -- this lets someone else start to garden.

When a gardener leaves the garden, they cannot give their plot to someone else. The plot coordinators assign the plot to the first person on our waiting list.

If people have received a plot close to renewal time, we usually waive the plot fee for the next year, but still ask that people register again as gardeners ($5).

Our garden belongs to a nonprofit society called the Strathcona Community Gardeners Society. This society oversees two gardens: our garden - Cottonwood Community Garden - and Strathcona Community Garden (Hawks/Prior). Both gardens elect members to the Society’s Board of Directors at an Annual General Meeting held on the second Tuesday in March.

Decisions about our specific garden are made by gardeners at meetings after the potluck at the monthly work parties. If you would like something discussed at a meeting, please contact

All of our committees are open to gardeners. Current committees include:

Coordinating Committee: organizes meetings & agendas

Expansion Committee: recommends stuff re expansion (this will be disbanded when the expansion is done – only a few decisions remain to be made – location & design for tool shed, meeting area design)
A contact list of people on certain committees is on the inside of the shed door. We distribute lists of gardeners to everyone about once a year so people can be in touch with each other. Please note that we only distribute info about gardeners who have checked that this is ok on our registration form.

Anyone is welcome to become a member of our garden. The annual membership fee is $5/year/person. You can be a member even if you don’t have or want a plot.

Anyone is welcome to apply for a plot at Cottonwood. Annual plot fees are $15/year.

We usually have a waiting list for plots.

Process for joining Cottonwood:

Call (604) 608-0384. After orientation, people who can commit to our work requirement are placed on our temporary list.

People on our temporary list are then asked to come to the next work party.

After a person has worked with us, they are placed on our waiting list.

The plot team matches people with plots in the order on the waiting list, matches people with ongoing tasks, and provides a membership contract to fill out.

If you know someone who is interested in joining Cottonwood, please ask them to call (604) 608-0384.

If you’d like more information or have questions about Cottonwood, please email cottonwoodgarden@gmail.com