

Stories through the Camera – A Photovoice Community Health Assessment about the Impacts of
Neighbourhood on Chinese Immigrant Older Adults' Health

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Abstract

A growing public health literature indicates that neighbourhood environment plays an important role in older adults' health. However, investigation on neighbourhood health impacts on Chinese immigrant older adults – a growing socially marginalized population in Canada – is currently missing. This study helps to fill this gap by exploring the multiple dimensions on how neighbourhood environmental factors affect Chinese immigrant older adults' different health aspects. The purpose of this study was to understand Chinese immigrant seniors' perspectives on healthy and harmful spaces located within their immediate neighbourhood, and the accessibility of these spaces among Chinese older adults. A Photovoice research method was used with 6 Chinese immigrant older adults from a middle-class neighbourhood in Vancouver, Canada. Research findings showed that neighbourhood attributes related to the built physical environment, social environment, and public/community service environment affect Chinese older adults' physical health, diet, mental health, social health, and mobility. This study highlighted the complex interactions between different aspects of neighbourhood factors and Chinese older adults' agency in obtaining health-benefiting resources. Future studies need to expand the concept of individual health to better understand the different interactive pathways between neighbourhood environmental factors and other health aspects.

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Introduction

This study of the neighbourhood environments has been one of the many ways public health researchers use to study contextual influences on individuals' health. Although there has been a growing research on the relationships between neighbourhood environment and health since the 1990s, few studies investigate neighbourhood environmental impacts on older adults' health and well-being. The limited literature indicates that the aging process is associated with reduced physical functions, mobility, mental capacities, and social networks, making older adults more susceptible to influences of their immediate surroundings. (Glass & Belfour, 2003; Shaw, Krause, Liang, & Bennett, 2007; Yen, Scherzer, Cubbin, Gonzalez, & Winkleby, 2007). As the literature expands, it is also worthwhile to study the neighbourhood health effects on socially marginalized populations. One example of an understudied socially marginalized group is Chinese immigrant older adults. This community is important to study because it is a growing and vulnerable population in Canada.

Chinese Immigrant Older Adults

Since the 1970s the population of Chinese immigrants in Canada have increased drastically. According to the 2011 National Household Survey from Statistics Canada, there were over 750,000 Chinese immigrants living in Canada. Among the Chinese immigrant population, older adults aged 55 and above are the most vulnerable.

Older Chinese immigrants in Canada deserve more attention in public health research and should be investigated separately from the general older adults population in Canada because this subgroup of the population has different health concerns in comparison to other Canadian older adults. Public health research suggests that older Chinese immigrants in Canada have more mental health issues report more functional difficulties in everyday lives, and encounter more

barriers in accessing health services than other Canadian older adults (McEwan, Donnelly, Robertson, & Hertzman, 1991; Chappell & Lai, 1998; Lai, Tsang, Chappell, Lai, & Chau, 2003; Lai, 2004a; Lai, 2004b; Lai & Chau, 2007).

Neighbourhood Environment and Older Adults' Health

The majority of research on the relationships between neighbourhood and older adults' health focus on the environmental contributors to physical activities. For example, older adults' level of physical activity is found to be associated with different built neighbourhood features such as age-friendly building designs, aesthetically pleasing parks, and clean, obstacle-free sidewalks (Garvin, Nykiforuk, 2012; Hanson et al., 2013; Mitra, & Kehler, 2015). Social environments, including participation in community programs, having adequate peer support, and engaging in volunteer activities, also facilitate physical health among older adults (Mahmood et al., 2012). Older adults' ability to engage in physical exercise is further influenced by economic and political aspects of the neighbourhood environment, such as the affordability of community programs and government financial support for exercising infrastructures (Belon, Nieuwendyk, Vallianatos, Nykiforuk, 2014).

There are three major limitations in the current investigation between neighbourhood environment and older adults' health. First, studies that focus on specific indicators often fail to explain the specific sociocultural context of the relationships. Second, current studies using quantitative methods are only able to test pre-identified indicators. Third, most studies focus mainly on how the environment influence older adults' health, but they do not explore how older adults as individuals interact with their neighbourhood environment. These issues can be addressed through paying particular attention to the lived experiences of older adults and using qualitative research methods. The study aimed to apply photovoice methodology to older

Chinese immigrants in Canada. The goal of the project was to understand Chinese immigrant seniors' perspectives on healthy and harmful spaces located within their immediate neighbourhood, and the accessibility of these spaces among Chinese older adults.

Methods

Photovoice

The project used photovoice to collect qualitative data among Chinese immigrant seniors. Photovoice is a qualitative research method that integrates photography, narratives, and critical dialogues (Palibroda, Krieg, Murdock, & Havelock, 2009; Powers, Freedman, & Pitner, 2012). The method is grounded in the theories of health promotion, critical education, feminism, documentary photography and community-based participatory research (Wang, 1999; Wang & Burris, 1994; Wang & Burris, 1997). The photovoice method collects research evidence by asking participants to take photos that reflect the reality of their lives (Wang, Yi, Tao, & Carovano, 1998). The participant-produced photographs are shared and discussed among participants to identify the strengths and weaknesses of their community (Wang & Burris, 1997).

Photovoice was also appropriate for this study because data collection was not hindered by language barriers, literacy or education level. This approach gives participant control over the data collection and analysis process, which allows research findings to reflect issues that participants believed to be important. The photographs and stories collected through the study also empower participants to voice their concerns and strengthen community members' relationships with decision-makers.

Research Settings

Research data was collected at the Riley Park-Little Mountain neighbourhood, which is located in central Vancouver, Canada. The Little Mountain neighbourhood had the 6th highest median household income in the city of Vancouver (Statistics Canada, 2006). Upper class families were attracted to this area due to its close proximity to transit, public amenities, social services and retail stores (Arundel, 2008). This neighbourhood also has a higher than average prevalence rate of low-income seniors in Vancouver (Statistics Canada, 2006).

There are two recent changes in the Little Mountain neighbourhood that are relevant to this study. The first one was the demolition of Vancouver's 224 oldest social housing units and home to almost 700 low-income residents due to privatization of local public land in 2007. Although the rezoning application required the housing developer to construct 234 social housing units on this land, only 53 units have been built to date (Bula, 2015; City of Vancouver, 2016). Another change occurred recently at Little Mountain was the construction of the Hillcrest Centre as the venue for the 2010 Winter Olympic games. The community centre's aquatic facility and other high quality sports amenities are still frequently used by local residents (Azpiri, 2015).

Recruitment and Sampling

This project was supported by three local organizations – Little Mountain Neighbourhood House, S.U.C.C.E.S.S. and More than A Roof Housing Society. Staff in these organizations offered assistance in securing meeting space, recruiting participants, and organizing project dissemination. The Principal Investigator is a bilingual social worker who organizes seniors programs in Chinese and, prior to this project, had existing relationships with Chinese seniors at the Riley Park-Little Mountain neighbourhood.

Research participants were recruited through a two-step process to minimize the potential for inadvertent coercion of potential study participants due to the Principal Investigator's existing relationship with the community. The program coordinator from S.U.C.C.E.S.S. first distributed study flyers to potential participants from a local Chinese older adults program. Interested Chinese older adults then attended an information section facilitated by the Principal Investigator. During the information section, potential participants were given the opportunity to learn about the detailed research procedure before making the decision to participate in the study.

The study recruited Chinese immigrant older adults who were aged 55 years and above, living at or near the Riley Park-Little Mountain neighbourhood. Participants must have immigrated from the People's Republic of China or Hong Kong (Special Administrative Region), been able to communicate in Cantonese, physically mobile, and able to obtain a digital camera device.

Data Collection and Analysis

Participants were asked to each take 12 photos within the boundary of the Riley Park-Little Mountain neighbourhood within a two-week period. To avoid preconceived assumptions about health, the Principal Investigator encouraged the participants to define health in their own perspectives by asking the following questions: 1) What does health mean to you? 2) How does your living environment affect your health? The photographs taken by participants were focused on the health benefiting or compromising neighbourhood spaces. Participants were also asked to complete a photo journal with six guiding questions for each photograph they took. The guiding questions were designed to encourage the participants to think about the underlying meanings of their photographs, and how the photographed content related to their own life experiences.

Additional data were collected through four two-hour long workshops spaced a week apart. Because majority of the participants did not speak English, the Principal Investigator conducted the workshops in Cantonese. The workshop conversations were audio recorded and simultaneously translated and transcribed into English by the Principal Investigator. All workshop materials were provided in Cantonese and English. The first workshop was an in-depth training on how to complete the tasks for the study. The second and third workshop focused on photo sharing and discussions. The photo-sharing activity was guided by the “SHOWeD” questions, developed by Wang and Burris (1997). These questions are: what do we see here; what is really happening here; how does this relate to our lives; why does this situation, concern, or strength exist, and what can we do about it? The fourth workshop was used to identify common themes, brainstorm recommendations, and rank the recommendations based on how likely they would be implemented in the future. Upon completion of the workshops, the Principal Investigator re-labeled and collapsed participant identified themes based on the different aspects of the neighbourhood environment and the associated health impacts, as done by many other photovoice studies.

Results

Five female and one male Chinese seniors took part in this study. Four participants were unrelated to any other participant. Two of the participants were married to each other. All participants had lived in the Little Mountain neighbourhood area for more than 10 years. The one participating couple found that producing photos for each of them were too challenging due to their shared lives and similarity in lived experiences; the couple worked as a team and produced one set of 12 photographs.

By the end of the study, participants produced 61 photographs in total, with 37 of these photographs meeting study inclusion criteria. Twenty-four photographs were excluded from analysis because they were taken outside of the geographic boundary of the study, submitted without descriptions, or taken before the study period.

Chinese Immigrant Seniors' Perspectives on Neighbourhood Environment and Health

Three aspects of the neighbourhood environment were featured in participant-produced photographs: the built environment, social environment and neighbourhood services. Built environment included physical spaces, facilities and man-made structures. Social environments included community safety and personal relationships established within the neighbourhood. Neighbourhood services referred to the availability and quality of community and civic services.

Participants' photographs also highlighted five aspects of health that were susceptible to neighbourhood environmental influences: physical health, diet, social connectedness, mental well-being and mobility (Table 1). Physical health referred to opportunities for exercise and active lifestyles. Diet represented the availability of healthy, affordable produce and the ability to source ethnic foods. Social connectedness indicated the support Chinese older adults received from building relationships with friends, families and neighbours. Mental well-being represented Chinese older adults' levels of happiness, contentment, stress, and loneliness. Mobility included Chinese older adults' ability to travel and their ease of transportation.

Health aspects affected by neighbourhood environments	Health-influencing neighbourhood environmental factors	Participant recommendations for a healthier neighbourhood
Physical Health	<ul style="list-style-type: none"> • Community facilities and seniors programs 	<ul style="list-style-type: none"> • Construct sheltered area in public plaza • Expand and update neighbourhood house with larger rooms and an elevator • Build more community gardens • Increase high-quality seniors supportive housing with life-enriching amenities • Regularly maintain neighbourhood redevelopment site to prevent weed growth • Reevaluate the laneway housing program and consider its impact on street parking congestion • Fix leakage problem in garbage trucks • Educate residents about proper recycling procedures through local TV channels and community fairs. • Train bus operators to be more punctual
Diet	<ul style="list-style-type: none"> • Locations that supply healthy and ethnic foods 	
Mental health	<ul style="list-style-type: none"> • Life-enriching amenities in seniors housing facilities • Therapeutic civic landscapes • Public libraries and community learning programs • Weedy neighbourhood redevelopment site • Residential parking spaces 	
Social health	<ul style="list-style-type: none"> • Maintaining supportive relationships with neighbours from different cultural backgrounds 	
Mobility	<ul style="list-style-type: none"> • Neighbourhood speed limit signs and roundabouts • Private household with overgrown trees • Unsanitary, litter-filled neighbourhood streets • Unreliable public transportation services 	

Table 1. Participant identified health-influencing neighbourhood environmental factors, their associated health aspects, and recommendations for a healthier neighbourhood

Health-Influencing Neighbourhood Environmental Factors

Within the five health aspects, ten health-influencing environmental factors were developed from participant produced photographs, which illustrated how neighbourhood environmental features provided opportunities or drawbacks to Chinese immigrant seniors' health, and how Chinese older adults actively utilized and changed their neighbourhood

environment to meet their health needs. A detailed description about these neighbourhood factors, organized based on their primary health aspects, is presented below.

Environmental factors that affect physical health

Participants described using *community facilities and seniors programs* within their neighbourhood to satisfy their need for exercise. For example, participants reported going to the community swimming pool, practicing practice Tai Chi in community a plazas (Figure 1), and going to field trips organized by local seniors programs in the summer time. Participants indicated that doing exercise everyday was an important step to maintain good bodily functions and physique.

Participants described that some neighbourhood facilities should be updated so that spaces for physical activities could be more accessible to older adults. For example, one participant mentioned that the community plaza she and other seniors used for Tai Chi practice did not have a canopy, which exposed older adults to harsh weather elements and prevented them from doing physical exercises in outdoor spaces. Another issue brought up by participants was cramped and outdated activity rooms that prevented seniors from doing physical exercise in large groups. Certain popular community programs had to turn seniors away due to space limitations. Participants also suggested that some older seniors had trouble getting up to the second floor for activities because the neighbourhood house did not an elevator. This structural limitation restricted community programs to older adults who were more physically capable. Participants suggested that the neighbourhood house should be updated with larger activity rooms and a functional elevator.



Figure 1. “Doing Tai Chi exercise in the morning. ...Tai Chi helps seniors maintain their bodily function and physique... Sometimes, after we work out, we get together for Dim Sum, so there are opportunities to make friends. I think this keeps me healthy physically and mentally.”

Environmental factors that affect diet

Having access to *locations that supply healthy and ethnic foods* was identified by participants as being important for maintaining healthy and balanced diets. The collected photographs highlighted two types of neighbourhood spaces that helped older adults obtain organic fruits and vegetables – the farmers markets and sidewalk planter boxes (Figure 2). Participants described local farmers market as a space for obtaining organic food products. The variety of healthy food options available at the farmer’s market helped older adults develop and maintain healthy diets. Participants also believed that while growing organic fruits and vegetables was a convenient and economical way for older adults to obtain healthy foods, there were not enough neighbourhood spaces for older adults to grow their own food. Participants suggested that building more community gardens in the neighbourhood would help older adults to have better access to organic produce.



Figure 2. “Setting up a planter box on the sidewalk is another way to grow fruits and vegetables. It is organic, economical, convenient, and healthy. This photo makes me think that we need more space for community gardens. Then everybody can eat healthy food.”

Participants also believed that having ethnic food stores close by was good for their health because they did not have to be restricted to a Western diet, which was considered to be less healthy than Chinese cuisine. Participants suggested that ethnic food stores were now dispersed in different neighbourhoods instead of concentrating solely in Chinatown area. Chinese food was also available in regular grocery stores. These contemporary locations made it much easier for older adults to obtain ethnic food so that they could develop healthy diets with familiar ingredients.

Environmental factors that affect mental health

Study participants understood mental health as a process of maintaining a positive emotional state and staying mentally active. The specific neighbourhood features identified by participants as important contributing factors for older adults' mental health were: enjoyable living space, therapeutic civic landscapes, libraries and community learning programs.

Participants believed that incorporating *life-enriching amenities in seniors housing facilities* provided a sense of comfort and allowed older adults to have more enjoyable retirement lives (Figure 3). Participants were particularly impressed by the new seniors supportive housing facility at the Little Mountain redevelopment site, which served as part of the replacement for the demolished social housing units in the neighbourhood. The new facility's communal dining hall, roof top garden, and lounging space designed for reading, watching TV, and socializing were described by participants as valuable assets that helped older adults age in place. With concerns about the aging population, participants called for an increase in high quality social housing facilities equipped with amenities that supported healthy aging.



Figure 3.

Participant 3: “This is a seniors supportive housing facility where we have computer lessons.”

Participant 6: “This is a brand new building. It has a very comfortable space, very nice view, and very quiet.”

Participant 4: “It shows that the government is looking after seniors, so they can have good retirement lives.”

Participant 5: “Oh, that’s right. It is such a nice place for elderly people.”

Participant 3: “Yes. This space allows seniors to eat, chat and read books. The seniors living here are very blessed.”

Outside of the home environment, participants indicated that attractions in parks (e.g. gardens, ponds and fountains), public artworks, and landscaping in high traffic areas were *therapeutic civic landscapes* that elicited pleasure, comfort, and relaxation among older adults. For example, many participants suggested that the local park provided a space for them to enjoy fresh air, escape from stress of their daily lives, and rejuvenate their bodies and minds (Figure 4). A number of participants also commented that the park-like neighbourhood streets gave older adults a sense of peace and joy.



Figure 4. *“Beautiful scenery, just like heaven on earth, gives people a pleasant feeling and eliminates all their ailments and discomfort. When you are situated in this beautiful scenery, both your mind and body are both liberated. When I see this beautiful view, I feel very comfortable, happy and blessed. I would like to thank our government for building such a nice infrastructure.”*

Study participants also expressed that learning new things and keeping up with the world was important for remaining older adults' mental health. *Public libraries and community learning programs* were identified as neighbourhood spaces that enabled participants to acquire new knowledge and stay informed. One participating senior commented that most public libraries in Vancouver now offered free Chinese newspapers and magazines, which made information more accessible for Chinese older adults in the neighbourhood. Participants further explained that health workshops, seniors English classes, and computer lessons allowed older adults to gain up-to-date health information, develop new skills, and improve mental capacities (Figure 5).



Figure 5. “*This neighbourhood house has different programs. Seniors come here to learn English together and chat with their peers. There are teachers/volunteers who help support these programs. So it’s a pretty nice centre. I come here all the time... Learning new things makes me happy, so my health improves naturally. And I won’t feel as lonely.*”

Participants also identified different areas and situations in the neighbourhood that caused them stress in everyday life. One of these areas was the *weedy neighbourhood redevelopment site* that had been sitting empty for almost a decade. Participants described that seeing weeds everywhere in public spaces while they were walking in the neighbourhood put them in a bad mood. It also caused participants a lot of frustration for when the weeds spread to their private lawns. Participants recommended that the landowner should maintain the empty redevelopment site on a regular basis to prevent weeds from spreading in the neighbourhood.

Another issue brought up by participants was the challenge in accessing *residential parking spaces* in the neighbourhood, which caused local residents a lot of stress and unnecessary personal conflicts. The increase in rental population was considered one of the reasons that exacerbated the parking space shortage. Some of the strategies participants used to secure their parking spaces include using recycling bins to occupy parking spots (Figure 6), leaving threatening notes about towing unrecognizable cars, or working with other neighbours to watch out for cars from outsiders. Participants believed that the neighbourhood parking space shortage was partly caused by the development of laneway houses. They suggested the local government to reevaluate the laneway housing program and consider its impact on street parking congestion.



Figure 6. “The homeowners put a number of blue recycling bins on the street to stop people from parking in front of their properties. Why? Because parking space in our area is very limited. A lot of the times, the parking spots for local residents are taken by people from other

Environmental factors that affect social health

Research participants indicated that *maintaining supportive relationships with neighbours from different cultural backgrounds* reduced household related stress and made everyday life more enjoyable among older adults. One participant described how neighbours from different cultural backgrounds live in peace and support each other in time of need, so everybody in the neighbourhood can live a healthier and more harmonious life (Figure 7). Some of the positive, relationship-building activities participants and their neighbours engaged in included helping with household repairs, providing companionship, motivating each other to do more physical exercises, sharing homemade foods, and watching out for suspicious activities on local streets.

Participants believed that relationship building activities like these benefited older adults by reducing isolation, increasing social support, encouraging physical activities, maintaining healthy diets, and improving overall neighbourhood safety. Unlike the other themes, participants did not propose any recommendations for this topic because they believed harmonious relationships with neighbours depended on individual efforts.



Figure 7. “*These two trees, even though they are attached to each other, they also have their unique features. One has flowers like this; the other one has flowers like that. They also get along with each other peacefully. It reflects people like us. Regardless of what race we are, we all get along with each other peacefully.*”

Environmental factors that affect mobility

Participants discussed neighbourhood environmental factors that contributed to older adults’ likelihood to be mobile and physically active in the community. For example, *neighbourhood speed limit signs and roundabouts* were considered beneficial to seniors’ overall health because these features helped to slow down traffic, prevented accidents from occurring, and allowed pedestrians to walk safely on neighbourhood streets. One participant also expressed that streets with orderly and tidy gardens gave her an overall impression of neighbourhood safety and made her feel more comfortable walking in the neighbourhood.

Participants also identified neighbourhood spaces that had the potential to compromise mobility. One safety-compromising space identified by a study participant was an area in a *private household with overgrown trees* that obstructed the sidewalk (Figure 8). The participant explained that untrimmed trees and shrubberies in private gardens forced pedestrians to walk on

the outer edge of the sidewalk or to step down onto the car lanes, which created a hazardous area for pedestrians.



Figure 8. “*The tree is so big and wide. It spills out of ... the neighbour’s fences, leaving just a narrow path for pedestrians to go through... It’s a safety concern... When I walk by this area, I have to be very careful and ensure that I am away from ongoing traffic.*”

Participants also believed that *unsanitary, litter-filled neighbourhood streets* caused by inappropriate individual behaviour and insufficient civic waste collection services reduced older adults’ likelihood to be physically active in the neighbourhood. Participants indicated that perished waste products in household garbage bins were left uncollected for weeks because some residents did not follow proper recycling guidelines to sort household waste. Participants worried that unsanitary areas like this might become breeding grounds for pests and bacteria, which could be harmful to older adults’ health (Figure 9). Many municipal garbage trucks were described as having leakage problems, causing wastewater to drip out onto the streets. Participants suggested that the unpleasant, foul odor produced from the wastewater undermined neighbourhood air quality, and compromised older adults’ normal breathing. To address these issues, participants recommended municipal government to fix leakage problems in garbage trucks and educate local residents about proper recycling procedure through TV channels and community fairs.



Figure 9. *“Sometimes people don’t follow the rules... They put the food scraps in the garbage bin instead of the green bin. So the garbage bin becomes very watery... [The food scraps] all get fermented in there. Sometimes, worms will grow inside. And it makes the whole street stinky... When the garbage truck goes by, it’s dripping garbage water everywhere. It’s not good. I think it affects people’s mood. When you go down the street, and the garbage truck comes, it’s very stinky, and it puts you in a bad mood.”*

Study participants further identified that *unreliable public transportation services* as the a major neighbourhood environmental factors that caused inconvenience, increased stress, and compromised mobility among older adults. Many participating older adults noticed that bus arrival time was not spaced out appropriately. As a result, public transit users often had to wait long periods of time to get on a bus. Participating seniors suggested that unreliable bus schedule caused frustration, fatigue, and sometimes prolong exposure to harsh weather conditions. To improve this situation, participants recommended the public transit company to train bus operators to be more respectful to the scheduled arrival times.

Discussion

This study explored Chinese immigrant seniors’ perspectives on the accessibility and health impacts of their neighbourhood environment. This study demonstrates the multidimensional interactions that underlie the relationship between a neighbourhood’s physical, social and service environments and Chinese older adults’ different health aspects, including their physical, mental, social well-being, diet and mobility. The use of photovoice methodology enabled study participants to determine the most salient factors that affect their relationships with

the environment without trying to conform to pre-existing assumptions or biases public researcher might have. Participant-produced photographs, descriptions and focus group discussions highlighted the influences that neighbourhood environments have on Chinese immigrant seniors' health status, and depicted Chinese immigrant seniors as active agents in acquiring health resources in their neighbourhood.

Therapeutic spaces such as local parks not only encouraged participants to do more physical exercises but also relax and rejuvenate their minds. Although previous studies have also shown that aesthetically pleasing neighbourhood spaces benefit people's physical and mental well-being (Lockett, Willis, & Edwards, 2005; Wendel-Vos et al., 2007; Mahmood et al., 2012; Belon, Nieuwendyk, Vallianatos, Nykiforuk, 2014), these investigations only focused on neighbourhood impacts on people's physical health. This study adds to this literature by highlighting that neighbourhood environmental factors affect multiple dimensions of health and well-being.

Similarly, participation in community programs and activities helped participants to maintain physical health and provided opportunities for socialization. In fact, study participants discussed the social benefits of physical activities more so than the benefits to their physical bodies. For example, participants indicated that physical activities allowed them to make new friends, strengthen relationships with families, and keep each other company. Doing physical exercises in the community centre was identified as an important strategy for Chinese older adults to avoid social isolation. Other research also demonstrates this relationship between community engagement and physical and social well-being (Mahmood et al., 2012; Belon et al., 2014).

This study suggests that restricting the investigation of neighbourhood health effects to its impact on physical well-being may run the risk of missing the neighbourhood environmental effects on psychological, social and other aspects of health and well-being. This is particularly important since majority of the relevant studies to date focus on the relationships between neighbourhood environment and people's level of physical activities. Future studies need to expand the concept of health to better understand the different interactive pathways between neighbourhood environmental factors and other health aspects, including mental health, socialization, diet and mobility.

This study also highlighted Chinese immigrant older adults' agency in adapting and manipulating neighbourhood environments to maintain healthy lifestyles and gain access to health resources. Health behaviours performed in public, such as practicing Tai Chi in the public plaza or growing organic vegetables on the sidewalk, required participants to actively interpret their surroundings and imagine the possibilities a neighbourhood space can offer in the context of promoting an individual's health. Participants' ability to achieve healthy and stress-free lives in their neighbourhood is further dependent on their capacity to use personal relationships. For example, study participants actively engaged with neighbours to collectively watch out for suspicious activities in the neighbourhood and ensure their personal safety and well-being. In a larger context of theorizing human agency and health inequities, the research findings provide empirical evidence for the scholarly belief that individuals' health is determined in part by people's ability to mobilize personal resources (Sen, 1999; Ruger, 2004; Cummins, Curtis, Diez-Roux, & Macintyre, 2007; Blacksher & Lovasi, 2012; Frohlich & Abel, 2014).

Many neighbourhood environmental factors identified by participants also share similarities with the concept of age-friendly communities developed by the World Health Organization through its active aging framework (WHO, 2007). Overlapping concepts included having a pleasant and clean environment, accessible green spaces, traffic rule reinforcement strategies, pedestrian safety, and frequent and reliable public transit. This study suggests additional age-friendly features of building recreational amenities in seniors supportive housing facilities, having more community gardens in the neighbourhood, and organizing more learning programs for older adults.

A number of neighbourhood factors identified in this study are also applicable to the general seniors population in Canada. For example, calmer traffic conditions, proximity to natural landscapes, efficient public transportation system, litter-free streets, and socialization-promoting spaces and programs encourage physical activities and promote community age-friendliness among Chinese immigrant older adults. These neighbourhood environmental factors were also mentioned in studies that focused on the average Canadian seniors (Garvin, Nykiforuk, & Johnson, 2012; Mahmood et al., 2012; Mitra, Siva, & Kehler, 2015).

One limitation of the study was the relatively short time spent on taking, sharing and discussing the content of participant produced photographs. Taking photographs for a photovoice study is different from taking photographs for leisure. The process requires participants to look at their environment critically rather than just capturing the beauty of the scenery. The two-week time frame of photo-taking and discussion for this study did not offer participants enough time to change their photo-taking habit from normal individuals to public health researchers, which may result in an over-representation of aesthetically pleasing images. Because the study required participants to be mobile enough to take photographs within their neighbourhood, the recruited

participants might be biased toward physically healthier individuals, whose understanding of their neighbourhood environment might be different from more frail Chinese older adults.

Findings of this study will be disseminated back to the community in a number of ways. A written summary of the study results will be distributed to seniors support workers from Little Mountain Neighbourhood House, S.U.C.C.E.S.S., More than A Roof Housing Society, and Hillcrest Community Centre. A presentation about the study and the findings will be organized at the Hillcrest older adults drop-in program. The presentation will be delivered in Cantonese and/or Mandarin. Chinese older adults who are active in the Little Mountain neighbourhood will be invited. If possible, a community event with a bilingual gallery display can be organized. Local community members, seniors support workers, city planners will be invited to the gallery event. The Principal Investigator will also be available for additional opportunities for public talks and presentations related to this study in seniors associations, planning tables, and community groups in the Greater Vancouver area.

Policy Implications

A number of policy implications emerged from this study. The study findings reiterate the importance of improving neighbourhood environmental factors to benefit the health of older adults because addressing one specific environmental factor has the potential to produce compounded health benefits in different aspects of people's well-being. There is also a need to move beyond tokenistic citizen consultations and incorporate community members' concerns into the decision-making process of local initiatives and policies (Sheedy, 2008). In response to this need, the neighbourhood health impacts and recommendations for a healthy neighbourhood emerged in this photovoice study should be taken into account by policymakers and government officials. The findings of this study can be used to develop action plans for creating age-friendly

communities in British Columbia. Since 2009, the Union of British Columbia Municipalities (UBCM) has been offering annual age-friendly community grants to local governments. The government of British Columbia also implemented an Age-Friendly BC initiative for communities and businesses. Municipalities can also apply to be officially recognized as an Age-Friendly British Columbia Community. The stories, photographs, and recommendations produced by participants also have the potential to be used by local social support agencies and municipal government to obtain funding and resources to make their neighbourhood more convenient and accessible to older adults.

Critical Reflection

This capstone project was designed based on the concept of collaborative, equitable community engagement. The study aimed to empower Chinese immigrant seniors and provide a platform for them to voice their concerns in the community. While the study obtained data from participants, it also intended to fulfill a need in the Chinese older adults community. In this case, the study provided participants with training on how to operate smartphone devices, which was an unmet demand in this particular community of Chinese older adults at Little Mountain neighbourhood.

Upon completion of the project, I believe the project had successfully achieved its goals. It sets an example of how equitable community engagement can be achieved without exploiting participants' valuable opinions, time and energy. It also made me realize that the process of collaborative, equitable community engagement and empowerment is a long-term effort that goes beyond the four weeks' time of the research project. Community members need more opportunities like this to realize their values as citizens and genuinely believe that they have expertise on many local issues in their community. As a social worker that works with seniors, I can see the potential for the study findings to be used by local social support agencies to develop seniors programs and initiatives that benefit seniors' overall quality of life and well-being. The photographs produced by study participants will also provide decision-makers from different levels of government visual representations of local community concerns.

What I learned from this study is that, as a public health practitioner, I need to have an on-going relationship with the population I serve. It is important that health promotion programs are developed in ways that respect community members' needs. This capstone project reminds me that public health practitioners may not have the same lived experiences as the population

they serve. To understand what facilitates and compromises community members' health and well-being, public health practitioners need to develop trusting relationships with community members. Community engagement should not be just an afterthought at the time of developing funding applications or an act to fulfill a program requirement. It should be ingrained into our everyday public health practices.

This project also inspired me to be more creative in the way I collect ideas from vulnerable community members who may not feel comfortable speaking up in a focus group setting. Visual imagery is also a powerful communication tool that can be used to bridge the gaps between public health decision makers and community members. In my future public health practices, I will be mindful of using artistic visual representations such as photographs, videos, and art works, to engage with community members and collaborate with other stakeholders.

Additionally, this project helps me to realize that health interventions that address sociocultural factors are just as important as services that address individual, biomedical factors. Based on my experience and knowledge, the current home and community care system is going through a process of streamlining its support services to medical interventions, which makes many critical services less capable of improving people's health in a holistic way. Rather than putting more limitations on the health services provided, I believe it is more effective to expand the scope of public health interventions. My future public health practices will incorporate components that facilitate collaborations with stakeholders outside of the medical field to address social and environmental determinants of health.

References

- Arundel, R. (2008). Vancouver Density: Investigating Current Patterns and Potential Future
Densification Areas. Retrieved from University of British Columbia, Geography
Department website:
<http://ibis.geog.ubc.ca/courses/geob479/classof08/vandensify/home.html>
- Azpiri, J. (2015, February 10). What is the legacy of the Vancouver Winter Olympics? *Global
News*. Retrieved from [http://globalnews.ca/news/1823549/what-is-the-legacy-of-the-
vancouver-winter-olympics/](http://globalnews.ca/news/1823549/what-is-the-legacy-of-the-vancouver-winter-olympics/)
- Bula, F. (2015, April 9). Social-housing project on site of Little Mountain reopens. *The Globe
and Mail*. Retrieved from [http://www.theglobeandmail.com/news/british-
columbia/social-housing-project-on-site-of-little-mountain-reopens/article23874620/](http://www.theglobeandmail.com/news/british-columbia/social-housing-project-on-site-of-little-mountain-reopens/article23874620/)
- Belon, A. P., Nieuwendyk, L. M., Vallianatos, H., & Nykiforuk, C. I. J. (2014). How community
environment shapes physical activity: Perceptions revealed through the PhotoVoice
method. *Social Science and Medicine*, 116, 10-21.
- Bernard, P., Charafeddine, R., Frohlich, K. L., Daniel, M., Kestens, Y., & Potvin, L. (2007).
Health inequalities and place – A theoretical conception of neighbourhood. *Social
Science and Medicine*, 65, 1839-1852.
- Blacksher, E., & Lovasi, G. S. (2012). Place-focused physical activity research, human agency,
and social justice in public health: Taking agency seriously in studies of the built
environment. *Health and Place*, 18, 172-179.
- Bowling, A., Barber, J., Morris, R., & Ebrahim, S. (2006). Do perceptions of neighbourhood
environment influence health? Baseline findings from a British survey of aging. *Journal
of Epidemiology and Community Health*, 60, 476-483.

- Chad, K. E., Reeder, B. A., Harrison, E. L., Ashworth, N. L., Sheppard, S. M., Schultz, S. L., ..., Lawson, J. A. (2005). Profile of physical activity levels in community-dwelling older adults. *Medicine and Science in Sports and Exercise*, 37(10), 1774-1784.
- Chappell, N. L., & Lai, D. (1998). Health care service use by Chinese older adults in British Columbia, Canada. *Journal of Cross-Cultural Gerontology*, 13, 21-37.
- Chaudhury, H., Mahmood, A., Michael, Y. L., Campo, M., & Hay, K. (2012). The influence of neighbourhood residential density, physical and social environments on older adults' physical activity: An exploratory study in two metropolitan areas. *Journal of Aging Studies*, 26, 35-43.
- City of Vancouver. (2006). *Census Local Area Profiles 2006*. Retrieved from:
<http://data.vancouver.ca/datacatalogue/censusLocalAreaProfiles2006.htm>
- City of Vancouver. (2016). *Policy Report: Development and Building*. Retrieved from City of Vancouver website: <http://council.vancouver.ca/20160629/documents/pspc3.pdf>
- Cummins, S., Curtis, S., Diez-Roux, A. V., & Macintyre, S. (2007). Understanding and representing 'place' in health research: A relational approach. *Social Science and Medincine*, 65, 1825-1838.
- Finlay, J., Franke, T., McKay, H., & Sims-Gould, J. (2015). Therapeutic landscapes and wellbeing in later life: Impacts of blue and green spaces for older adults. *Health and Place*, 34, 97-106.
- Frohlich, K. L., & Abel, T. (2014). Environmental justice and health practices: Understanding how health inequities arise at the local level. *Sociology of Health and Illness*, 36(2), 199-212.

- Garvin, T., Nykiforuk, C. I.J., & Johnson, S. (2012). Can we get old here? Seniors' perceptions of seasonal constraints of neighbourhood built environments in a northern, winter city. *Geografiska Annaler: Series B, Human Geography*, 94(4), 369-389.
- Gauvin, L., Richard, L., Kestens, Y., Shatenstein, B., Daniel, M., Moore, S. D., ... , & Payette, H. (2012). Living in a well-serviced urban area is associated with maintenance of frequent walking among older adults in the VoisiNuAge Study. *The Journal of Gerontology, Series B: Psychological Sciences and Social Sciences*, 67(1), 67-88.
- Hanson, H. M., Schiller, C., Winters, M., Sims-Gould, J., Clarke, P., Curran, E., ... , Ashe, M. C. (2013). Concept mapping applied to the intersection between older adults' outdoor walking and the built and social environments. *Preventive Medicine*, 57(6), 785-791.
- Kaczynski, A. T., Potwarka, L. R., Smale, B. J. A., & Havitz, M. E. (2009). Association of parkland proximity with neighbourhood and park-based physical activity: Variations by gender and age. *Leisure Sciences: An Interdisciplinary Journal*, 31(2), 174-191.
- Lai, D. W. L. (2004a). Health status of older Chinese in Canada: Findings from the SF-36 health survey. *Canadian Journal of Public Health*, 95(3), 193-197.
- Lai, D. W. L. (2004b). Impact of culture on depressive symptoms of elderly Chinese immigrants. *Canadian Journal of Psychiatry*, 49(12), 820-827.
- Lai, D.W. L. & Chau, S. B. (2007). Effects of service barriers on health status of older Chinese immigrants in Canada. *Social Work*, 52(3), 261-269.
- Lai, D. W. L., Tsang, K. T., Chappell, N. L., Lai, D. C. Y., Chau, S. B. Y. (2003). *Health and Well Being of Older Chinese in Canada*. AB: University of Calgary.

- Lockett, D., Willis, A., & Edwards, N. (2005). Through seniors' eyes: An exploratory qualitative study to identify environmental barriers to and facilitators of walking. *Canadian Journal of Nursing Research, 37*(3), 48-65.
- Macintyre, S., Ellaway, A., & Commins, S. (2002). Place effects on health: How can we conceptualise, operationalize and measure them? *Social Science and Medicine, 55*, 125-139.
- Mahmood, A., Chaudhury, H., Michael, Y. L., Campo, M., Hay, K., & Sarte, A. (2012). A photovoice documentation of the role of neighbourhood physical and social environments in older adults' physical activity in two metropolitan areas in North America. *Social Science and Medicine, 74*, 1180-1192.
- McEwan, K. L., Donnelly, M., Robertson D., & Hertzman, C. (1991). *Mental Health problems among Canada's older adults: Demographic and epidemiologic consideration*. Ottawa: Mental Health Division, Health Services and Promotion Branch, Department of National Health and Welfare.
- Mitra, R., Siva, H., & Kehler, M. (2015). Walk-friendly suburbs for older adults? Exploring the enablers and barriers to walking in a large suburban municipality in Canada. *Journal of Aging Studies, 35*, 10-19.
- Novek, S., & Menec, V. (2014). Older adults' perceptions of age-friendly communities in Canada: A photovoice study. *Aging and Society, 34*(6), 1052-1072.
- Palibroda, B., Krieg, B., Murdock, L., & Havelock, J. (2009). *A practical guide to photovoice: sharing pictures, telling stories and changing communities*. Winnipeg, Manitoba: Prairie Women's Health Centre of Excellence.

- Powers, M., Freedman, D., & Pitner, R. (2012). *From snapshot to civic action: A photovoice facilitator's manual*. Columbia, SC: University of South Carolina, College of Social Work.
- Ruger, J. P. (2004). Ethics of the social determinants of health. *The Lancet*, 364(9439), 1092-1097.
- Sen, A. (1999). *Development as Freedom*. New York: Random Books.
- Shaw, B. A., Krause, N., Liang, J., & Bennett, J. (2007). Tracking changes in social relations throughout late life. *The Journal of Gerontology. Series B, Psychological Sciences and Social Sciences*, 62(2), S90-99.
- Sheedy, A. (2008). *Handbook on Citizen Engagement: Beyond Consultation*. Ottawa: Canadian Policy Research Networks.
- Statistics Canada. (2006). *Census data for City of Vancouver local areas 2006*. Retrieved from City of Vancouver website:
<http://data.vancouver.ca/datacatalogue/censusLocalAreaProfiles2006.htm>
- Swinburn, B., Egger, G., & Raza, F. (1999). Dissecting obesogenic environments: The development and application of a framework for identifying and prioritizing environmental interventions for obesity. *Preventive Medicine*, 29, 563-570.
- Wang, C., (1999). Photovoice: A participatory action research strategy applied to women's health. *Journal of Women's Health*, 8(2), 185-192.
- Wang, C., & Burris, M. A. (1994). Empowerment through photo novella: Portraits of participation. *Health Education Quarterly*, 21(2), 171-186.
- Wang, C., & Burris, M. A. (1997). Photovoice: Concept, methodology, and use for participatory needs assessment. *Health Education and Behavior*, 24(3), 369-387.

- Wang, C. C., Yi, W. K., Tao, Z. W., & Carovano, K. (1998). Photovoice as a participatory health promotion strategy. *Health Promotion International, 13*(1), 75-86.
- Wendel-Vos, W., Droomers, M., Kremers, S., Brug, J., & van Lenthe, F. (2007). Potential environmental determinants of physical activity in adults: A systematic review. *Obesity Reviews, 8*(5), 425-440.
- World Health Organization. (2007). *Global Age-Friendly Cities: A Guide*. Retrieved from: http://www.who.int/ageing/publications/Global_age_friendly_cities_Guide_English.pdf?ua=1
- Yen, I. H., Scherzer, T., Cubbin, C., Gonzalez, A., & Winkleby, M. Women's perceptions of neighbourhood resources and hazards related to chronic disease risk factors: Focus group results from economically diverse neighbourhoods in a mid-sized U.S. city. *American Journal of Health Promotion, 22*(2), 98-106.

Appendix

Stories to the Camera Photovoice Study Workshop Outline

Information Session

- Overview of the project
- Participants' roles
- Explain the consent form and the rights as a research participant
- Interested and qualify candidates complete the consent form and demographic questionnaire

Day 1 Introduction

- Project goals and objectives
- Discussions
 - What does health mean to you?
 - How does your living environment affect your health?
- Overview of participant responsibilities
 - Outlining participant tasks
 - Training on how to use the photo journal
 - Ethics and safety
 - Pose themes for photo taking activity
 - What community spaces in your neighbourhood do you think would be good for your health?
 - Are there any community spaces that you think would be good for your health, but you have never been to those places before?
 - What community spaces in your neighbourhood do you think would be bad to your health?
 - Are there any community spaces that you think would be bad for your health, but you have never been to those places before?
- Training on basic photography skills
- Training on how to use photo-taking devices (smart phones and tablets)

Day 2 Photo-Sharing

- Participants take turn to describe the two photos they selected, while other group members reflect on the photos and stories
 - Photo descriptions will be based on journal contents
 - Identify similarities and differences among the photos being describe (focus on shared experiences)
- Debriefing (Participants reflect on the photo-taking experience)
 - Are there any challenges and how do we address these challenges
 - Identify ideas that you wish to capture, but do not know how to put them on a photograph → how do we put the missing ideas on a photo

Day 3 Photo-Sharing

- Participants take turn to describe the two photos they selected, while other group members reflect on the photos and stories
 - Photo descriptions will be based on journal contents
 - Identify similarities and differences among the photos being describe (focus on shared experiences)

Day 4. Synthesizing Data and Strategizing for Actions

- Synthesize data
 - Using the identified key words in the photo journals, sort photos into major themes
 - Discuss each theme individually using the SHOWED questions
 - Why do these situations exist?
 - What can we do about it?
- Participants come up with recommendations on how to improve neighbourhood environment that would benefit Chinese immigrant seniors' health
- Determine possibility for action
 - Participants will be asked to rank the recommendations on how likely these categories will facilitate concrete actions.