

Aging in Powell River

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July 12, 2016

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This research project is dedicated to my mom, who taught me the value of community and my dad, my buddy, who passed away March 15, 2016, due to Alzheimer disease.

Thank you both for your support and love.

Executive Summary

The Canadian population is aging rapidly and, as aging comes with an increase in chronic conditions, healthcare costs are rapidly increasing as well. The move from community-based care to residential care is another major contributor to an increase in healthcare costs. Aging in place, defined as the ability for seniors (those who are 65 and older) to remain independent in their community for as long as they desire, is both considerably less expensive and desired by the majority of seniors.

The objective of this research project is to support the Powell River Division of Family Practice to understand how well seniors in Powell River are able to age in place and to explore what could be done to support them in doing so by answering the following research question:

How do local environmental aspects and informal and formal support systems affect the ability of Powell River seniors to age in place?

Background

To assist people to age in place, British Columbia offers publicly funded home and community care services designed to complement existing informal support such as care by family and friends. Over the last 10 years, access to home support services and residential care beds has dropped significantly, resulting in more people unnecessarily occupying hospital beds. The Powell River Regional District is a rural community of approximately 20,000 people including 27% seniors. The community cannot be reached by land and public transportation services are limited, especially in the outlying areas. Houses are mainly detached, single-family homes with the living room above ground level. Powell River offers home and community care services, has several private care providers, and has a residential care facility. In 2015, an average of 14 patients were waiting in the Powell River's General Hospital for a residential care bed.

Literature Review

The literature review focused on three key elements that contribute to people's ability to age in place: individual factors, the physical environment, and formal and informal care. The literature highlighted how seniors' health is influenced by their physical activity level and social vulnerability and how their physical environment, including access to transportation, directly affects them. The literature discussed how communities could increase service access and provide volunteer opportunities for older adults, which positively affects their health.

The literature reported an expected decline in access to formal and informal caregivers and provided options to counter this development such as improvement of working conditions for

formal caregivers and financial aid for informal caregivers. This includes individualized support to reduce caregiver burden, which is especially prominent in caregivers of Alzheimer patients. It highlighted lack of transportation, limited access to amenities, and reduced availability of formal and informal care providers as additional barriers for rural seniors to age in place. Additionally, the literature revealed how the loss of a driver's license increases the risk of social isolation and decreases access to formal support services.

Methodology

The research uses a case study approach to explore the complex social conditions of aging in place in Powell River. Four different groups of participants were recruited using purposeful sampling. Group 1 included two independent living seniors, one living in the centre of town and one rural; both receiving some kind of formal and/or informal support. Group 2 included informal caregivers of the selected seniors; group 3 consisted of formal caregivers providing a community-wide perspective; and group 4 was comprised of executive staff of senior-serving organizations and local government. Group 1 participants were recruited by Vancouver Coastal Health; group 2 by group 1 participants; and the other participants were recruited by the researcher.

Data for group 1 and 2 was collected using individual interviews. A focus group was used to collect data from group 3 and data was collected from group 4 through a workshop. Interviews, focus group, and workshop activities were audio recorded and transcribed. With the support of group 4, a thematic analysis was employed to examine and organize the data. Group 4 also provided input into the development of the recommendations.

Findings and Discussion

Two case histories are presented based on the interviews with the seniors, observations made in their homes and direct environment, and the interviews with their informal caregivers. The case histories describe the stories of two seniors, one living alone in the centre of town and one living with her husband south of town. They describe their struggle and resilience to remain as independent as possible in their own homes and highlight barriers accessing formal and informal support, barriers in their homes, outside and with transportation, the difficulty finding adequate housing, and the impact of moving at a later age to a new community. These barriers were confirmed as also existing for other seniors in the community in the focus group by the formal caregivers, who in addition identified loneliness as a common issue.

Thirteen themes were developed and grouped within environmental aspects, support services, community, and individual factors based on the data. Further review of these themes resulted in four key outcomes: service access, social vulnerability, demand on seniors' finances, and

demand on government resources. A model, illustrated in Figure 0 provides an overview of the interconnectedness between the themes and key outcomes associated with the research topic.

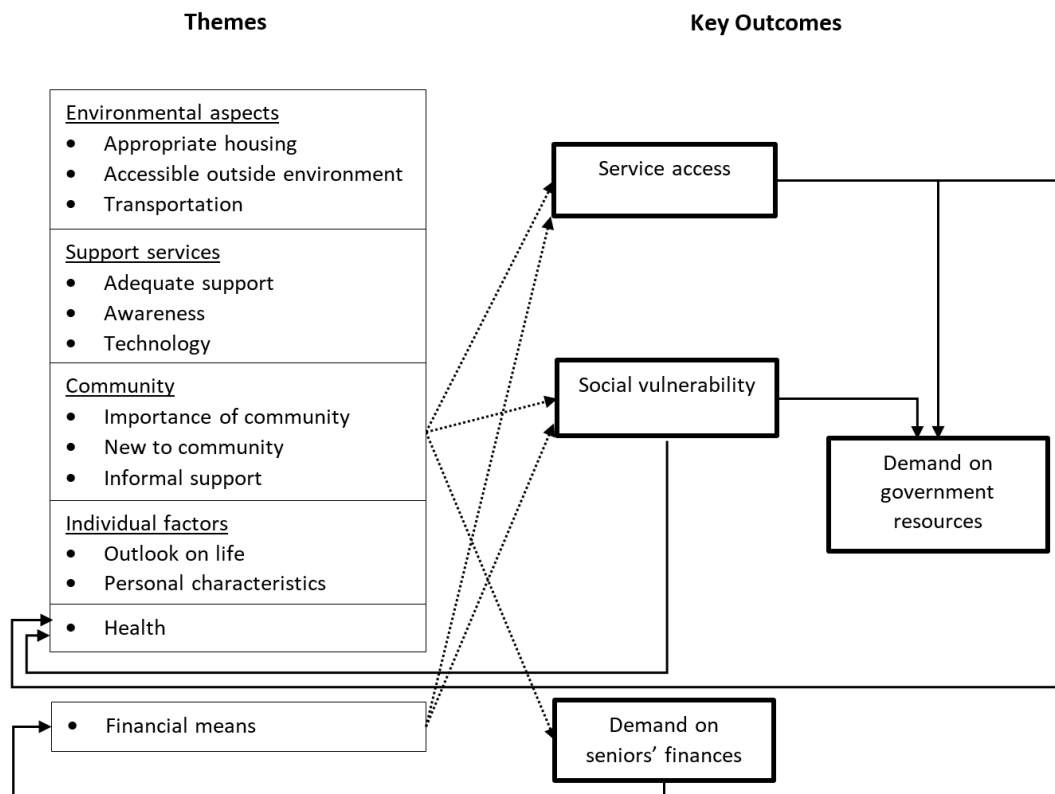


Figure 0. Preliminary model of the interconnectedness of themes and key outcomes

Issues caused by any one theme may affect service access, social vulnerability and the demand on seniors' finances, as well as an increase on the demand on government resources. The figure shows the crucial role of seniors' health and financial means and indicates how they may start a chain reaction that can force a senior to leave their home. It also shows how government has several options to prevent this development and reduce the demand on its resources.

Recommendations

The nine recommendations flowing from the research are based on the principle that improvements should be within the client or community sphere of influence, and are focused on improving service access and reducing social vulnerability. The recommendations are directed to the Powell River Division of Family Practice, and are organized by level of feasibility and expected impact as determined by the researcher:

1. Increase the use of telehealth equipment in the Powell River General Hospital to enable seniors to access specialist support in Powell River;
2. Approach the City of Powell River to adjust the funding criteria of the Powell River Community Forest to enable funding the PR Seniors Connect program in order to increase

service awareness, apply for provincial and/or federal pilot-program status, and work with the province and/or federal government towards ongoing government funding;

3. Approach the City of Powell River and the Powell River Regional District to improve accessibility of the outside environment by incorporating Complete Street principles, developing sidewalks on both sides of the roads, and upgrading all shoulders on critical rural routes;
4. Approach the City of Powell River and the Powell River Regional District to improve transportation for people with mobility challenges by bringing all organizations together that serve and represent seniors and people with disabilities to develop a local solution to transportation inaccessibility, based on national and international best practices for people with mobility issues, particularly those living outside of city limits;
5. Approach the City of Powell River to work with the Powell River Community Foundation, the Powell River Community Forest, and the faith communities to develop a neighbourhood strengthening program and grant based on best practices.
6. Approach the Powell River MLA to work together with the Provincial Seniors Advocate to develop a comparison between our local needs and current Home and Community Care budget, and collaborate with the city and regional District to seek additional funding for home and community care services from Vancouver Coastal Health and the Provincial Ministry of Health;
7. Approach Vancouver Coastal Health to develop a business case to support a request for an additional investment from Vancouver Coastal Health's central office and the Ministry of Health to employ a geriatric specialist for Powell River;
8. Approach the City of Powell River and the Powell River Regional District to encourage the development of adaptable housing and use of universal design by implementing policies and educating the public;
9. Approach the City of Powell River to focus its recruitment campaign on young families to balance the high percentage of seniors in the community.

Conclusion

The ability of seniors to age in place in Powell River is both hindered and supported by elements in the environment, support services, community, and individual factors. This research describes how these elements affect service access, social vulnerability, and the demand on seniors' finances and how they may affect the demand on government resources. Upstream investments improving seniors' environment and support services can decrease the demand on government resources. This research also concludes that the promotion of Powell River as a retirement community draws older adults into the community, potentially causing more difficulties for all seniors to age in place.

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1. Introduction

The world's population is aging rapidly and so are Canadians (Statistics Canada, 2015, p. 50). Although still the second youngest country in the G7 – an informal leadership forum of seven large industrialized countries – the number of people age 65 years or older surpassed the number of 0-14 year olds for the first time in Canadian history on July 1, 2015 (Statistics Canada 2015, pp. 51-52; Government of Canada, 2015, para. 2). As the baby boom generation is now retiring, the number of seniors is expected to continue to grow. While those 65 and older currently account for 16.1% (5.8 million) of the Canadian population, the number is expected to increase to 22.7% (10 million) by 2036 (Verbeeten, Astles, & Prada, 2015, p. 3; Statistics Canada, 2015, p. 10). British Columbia's 65-plus population of 17.5% is slightly higher than the national average (Statistics Canada, 2015, p. 54). Since the number of chronic conditions increases with age, aging has a large impact on healthcare costs, as shown in Figure 1 (Verbeeten et al., 2015, p. 5; British Columbia Ministry of Health (BCMh), 2015, pp. 14, 23). For example, while in 2013 15% of the Canadian population was 65 or older, seniors accounted for 45% of the public healthcare budget (Canadian Institute for Health Information (CIHI), 2015, p. 21). Frail people living in residential care cause the majority of these costs. The 1% of the frail population living in residential care account for 25% of the healthcare cost, compared to 3% of the cost for the less than 1 % of frail people living in community (BCMh, 2015, p. 22).

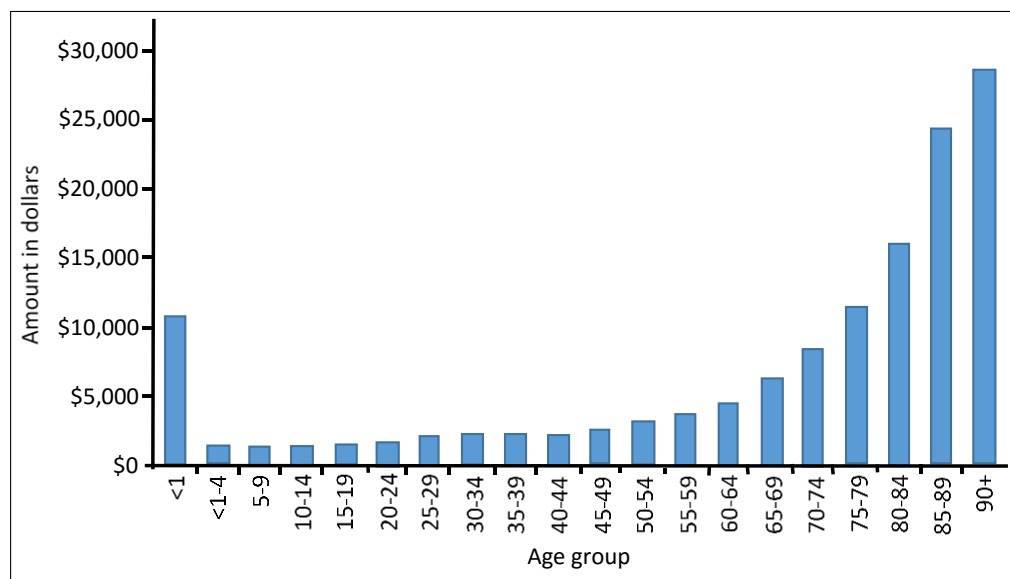


Figure 1. Healthcare cost in 2013 per Canadian by age group. Reproduced from *National Health Expenditure Trends, 1975 to 2015* (p. 19), by CIHI, 2015, Retrieved from https://www.cihi.ca/sites/default/files/document/nhex_trends_narrative_report_2015_en.pdf. Copyright 2015 by CIHI.

Although the World Health Organization (WHO) (2015a, para. 2) calls the aging of the world's population a public health success, it warns of major challenges if societies are not ready to respond adequately to this change (World Health Organization, 2015b). To enable healthy aging, the WHO started advocating for the development of age-friendly communities in 2005. In age-friendly communities, seniors are included and respected, and the physical environment is adjusted to their needs (World Health Organization, 2007, p. 5). In May 2016, the WHO (2015c, p. 2) presented a *Global Strategy and Action Plan on Ageing and Health* at the 69th World Health Assembly. The goal of the plan is that by 2020 all countries promise to support the well-being of their aging population, for example, through the adjustment of their health systems and creation of environments that are age-friendly because they support people to do the activities that are important for them (p. 2, 9). In addition to the physical environment, the WHO recognizes the importance of health and social services for the well-being of an aging population (p. 9). It has become harder to receive the appropriate supports to remain independent and age safely at home (Chomic Consulting & Research, 2012, p. 2). Rural seniors in particular often experience more barriers to aging in place (Bacsu et al., 2012, p. 81; Dye, Willoughby, & Battisto, 2011, p. 77; Kerr, Rosenberg, & Frank, 2012, p. 47).

The Client: Powell River Division of Family Practice

The Powell River Division of Family Practice (PRDoFP) is a non-profit organization funded by the provincial government and Doctors of BC (Doctors of BC, n.d., para. 1). It was formed in 2010 to support physicians in Powell River and to work with community partners to improve community health (Doctors of BC, 2014, para. 1, 2). PRDoFP has been working on several community initiatives. One initiative, entitled *A GP for Me*, aimed to increase the number of physicians in Powell River, and support vulnerable patients in finding a family doctor and accessing services (Powell River Division of Family Practice, 2015, pp. 5 - 6). Seniors are part of this group of vulnerable patients and improving their access to community services was identified as one of the strategies of *A GP for Me*. The researcher was contracted by PRDoFP as the Project Manager for the *A GP for Me* initiative. Although the initiative ended March 31, 2016, the research results will inform future work of the PRDoFP for this vulnerable patient group.

Research Question

The purpose of this research is to understand how well seniors in Powell River are able to age in place. For this research, aging in place is defined as the ability of seniors to remain independent in their community for as long as they desire, whereby seniors are people age 65 and older. Remaining independent can include receiving support services and care at home, but excludes living in an assisted living facility or residential care setting. The research will examine factors that contribute to aging in place such as environmental aspects (e.g. type of housing and the

availability of transportation) and formal and informal support. The research will examine what changes could be made to enable seniors to remain independent for longer in their community.

The research question for this project is:

How do local environmental aspects and informal and formal support systems affect the ability of Powell River seniors to age in place?

Report Structure

Following this introduction, Chapter 2 will provide an overview of the history of home and community care in Canada and, more specifically, in British Columbia. It will also provide background information about Powell River. Chapter 3 contains a literature review about the aspects that affect seniors' ability to age in place, followed by a description of the research methodology and methods in Chapter 4. The research findings and discussion are presented in Chapter 5. Chapter 6 presents the recommendations and the report is closed with Chapter 7, the conclusion.

2. Background

The Powell River Regional District, which sits on the traditional territory of the Tla'amin Nation, is located on the west coast of British Columbia in Canada and stretches out over 5,075 square kilometers (Powell River Division of Family Practice, 2015, p. 10). It is only accessible via a 25-minute flight, a five-hour trip by car and ferry from Vancouver, or a one-and-a-half-hour ferry ride from Comox. Powell River has been identified by the Province of British Columbia (2015, pp. 28-29) as a rural community, based on the population, population density, and its distance from a major medical community. In their 2014 health strategy, the provincial government lists service access for people in rural and remote areas as one of the priorities (Ministry of Health, 2014). The community is serviced by Vancouver Coastal Health (VCH).

Established in the early 1900s by the Powell River Company, a paper and pulp mill corporation (Townsite Heritage Society, 2015), the district has now a population of approximately 20,000 (Powell River Community Foundation (PRCF), 2015, p. 5). It encompasses the City of Powell River, with a population of approximately 13,000, and rural communities such as Lund, the island Texada, and the Tla'amin techosum (village) (Powell River Division of Family Practice, 2015, p. 10). Although there has been a slight increase in population over the past ten years (BCStats, 2012, p. 2), between July 1, 2013, and June 30, 2014, the population decreased by 437 people (PRCF, 2015, p. 22). The largest influx of new people resulted from individuals relocating from other parts of Canada, while the largest decrease was caused by natural deaths.

Rural and remote resource communities often have a higher concentration of seniors, due to outmigration of youth and in-migration of seniors, especially in British Columbia (Clark & Leipert, 2007, p. 14; DesMeules et al., 2012, p. 24; Joseph & Skinner, 2011, p. 382). The percentage of seniors in Powell River is far higher than the provincial average. In 2011, Powell River ranked ninth on the list of Canada's statistical areas with the highest proportion of people over age 65 at 22.2% (Statistics Canada, 2013b). BC Stats (2015) projects the number of seniors in the region to increase from 27 % in 2016 to 31 % in 2041. The largest changes will occur in the higher age groups. The size of the age group 75 and over is projected to double from 2,298 to 5,001, while the number of people age 90 and over is projected to triple from 286 to 1,075. The higher proportion of seniors has been linked to the higher proportion of patients with at least one chronic condition. In 2010, 44.1% of the population had at least one chronic condition, compared to 36.9 % in BC (Powell River Division of Family Practice, 2015, p. 11).

In terms of transportation, Powell River has HandyDART, a door-to-door service for people with mobility challenges, and public transportation (BC Transit, n.d.a; BCTransit, n.d.b). Services to the outlying areas are limited; for example, services to Texada are only provided once a week

(BC Transit, 2015, p. 2). In a 2013 public health survey, Powell River residents indicated that many sidewalks are not well maintained, most amenities are not within walking/cycling distance, and transit stops are more than five minutes away from their destination (My Health My Community, 2015, p. 8). Lack of shoulders in rural areas and lack of a connected pedestrian and cycling network within the city limits, both hindering walking and cycling, were recognized in the 2014 Regional Transportation Plan and 2014 Sustainable Official Community Plan (City of Powell River, 2014, p. 66; ISL Engineering and Land Service, 2014, p. 12).

According to a recent Vital Signs report (PRCF, 2015, p. 20), 53% of the income earners in Powell River earn below the city's living wage and the average income in the community is far below BC's average. However, compared to the rest of the province, fewer seniors in Powell River have an income below the commonly used low income measure LIM (PRCF, 2015, p. 10; Statistics Canada, 2013, para. 1). Powell River's rental unit vacancy rate has been low and was 2% in 2014 (PRCF, 2015, p. 18). The majority of the houses in Powell River are detached single family homes, with the living room situated above ground level. Since 2005 no new apartments or rental housing have been developed and 19.3% of the rental units are in need of major repairs (PRCF, 2015, p. 18). Table 1 compares common socio-economic factors of Powell River and BC.

Category	Powell River	BC
Visual minorities (2006)*	2.8 %	24.8%
Aboriginal identity (2006)*	5.7 %	4.8 %
Lone parents (2006)*	27.8%	25.7 %
65+ (2012)*	24.3 %	15.9 %
Elderly dependency rate (2012)*	40.9%	24.1 %
Population growth last 10 years*	0.4%	1.2 %
Households paying over 30% of income on housing (2005)*	20.6%	29%
Renters paying 30% or more on housing (2010)**	47.7%	45.3%
Home owners paying 30 % or more on housing (2010) **	14.7%	23.8%
Housing units in need of major repairs (rental and owner households) (2011)**	9.9%	7.2%
Average employment income, before tax (2012)**	\$35,494	\$42,453
Average family income, before tax (2010)**	\$71,717	\$91,967
Employable 15+ on income assistance (excl. aboriginal people on reserve & disabled)*	1.5%	0.9%
Unemployment rate (2010)**	8%	7.8%
Income share of poorest households (2005)*	22.3%	20.7%
65+ below LIM (low income measure) (2010)**	10.9%	13.9%
Life expectancy at birth – average 2008-2012*	80.7 years	82.3 yrs
Population rate with at least one chronic condition (2010) ***	44.1%	36.9%
Population rate with depression/anxiety	27.6%	20.7%
Potential years of life lost due to suicide/homicide – Average*	7.6 years	4.0 years

* BC Stats, 2012; ** Powell River Community Foundation, 2015; *** Powell River Division of Family Practice, 2015

Table 1. Powell River in comparison to British Columbia.

Aging in Place

Aging in place describes people's ability to remain independent with the appropriate supports in their home or community when they are aging, for as long as they desire and their health allows (Canada Mortgage and Housing Corporation, 2015, para. 2; Fausset, Kelly, Rogers, & Fisk, 2011, p. 125). While the term aging in place is a commonly used term among policy makers, the term is not always familiar to seniors (Wiles, Leibing, Guberman, Reeve, & Allen, 2012, p. 357). To age in place, people often require health services, social services (Dye, Willoughby, & Battisto, 2011, p. 79; Casado, Vulpen, & Davis, 2011, p. 530; Clark & Leipert, 2007, p. 14), and an accessible physical environment (Iecovich, *Aging in place: From theory to practice*, 2014, p. 22; Sixsmith & Sixsmith, 2008, p. 225; Oswald, et al., 2007, pp. 96, 97). These are all elements mentioned by the WHO. From a healthcare perspective, aging in place is far less expensive than aging in a residential care facility. In *Setting Strategic Priorities for the B.C. Health System*, the Ministry of Health (2014, p. 22) indicated that it was close to three times more expensive in 2011/2012 to care for frail people in residential care facilities than in community.

The majority of seniors desire to age in place (Canada Mortgage and Housing Corporation, 2015, para. 2; Hillcoat-Nallétamby & Ogg, 2014, p. 1771; Iecovich, 2014, p. 21; Sixsmith & Sixsmith, 2008, p. 221). However, it has become harder to receive the appropriate supports to remain independent and safe at home (Chomic Consulting & Research, 2012, p. 2). Over the last 10 years, access to home support services has dropped by 30% in British Columbia (Cohen, *Caring for BC's aging population: Improving health care for all*, 2012, p. 6). At the same time, the demand for support services has increased and is estimated to double 30 years from now (Keefe, 2011, p. 12). Furthermore, the availability of informal support providers such as family and friends that provide free services, is expected to decline (Keefe, 2011, p. 14; Roth, Fredman, & Haley, 2015, p. 310). In addition to limited services and support, rural seniors in particular experience more barriers to aging in place in their physical environment than urban seniors (Bacsu, et al., 2012, p. 81; Dye, Willoughby, & Battisto, 2011, p. 77; Kerr et al, 2012, p. 47). Hillcoat-Nallétamby and Ogg (2014, p. 1777) argued that seniors' desire to age in place is fueled by their lack of housing alternatives or power to change their circumstances. In addition, Sixsmith and Sixsmith (2008, p. 224) indicated that people are mainly fearful moving to an institutionalized setting. They mentioned, however, how a senior's own home can imprison them and become the symbol of extreme loneliness (pp. 222-228).

Home and Community Care

Home and community care supports people to remain independently in their home (Government of Canada, n.d.; para. 1). Depending on the client's needs, services can be provided by regulated or non-regulated health care professionals, volunteers, caregivers, friends, and family. In 2011, CIHI (p. 73) reported that almost one million people were receiving

some form of home and community care services in Canada; 82% of these service recipients were older than 65. While physician and hospital services are federally legislated and covered by the Canadian Health Act, home and community care services are not part of this act (CIHI, 2011, p. 74; Cohen, Murphy, Nutland, & Ostry, 2005, p. 13; Health Canada, 2012, section *what happens next*, para. 3). Hence, there is a wide variety of service definitions and disparity of service accessibility among Canada's provinces.

Services in British Columbia

British Columbia established home and community care services in 1978 (Cohen, Tate, & Baumbusch, 2009, p. 16). Publicly funded services include home health services such as recreation programs for seniors, home support services that provide assistance with activities like bathing and grooming and home care by licensed nurses (British Columbia Ministry of Health (BCMh), 2016c, section 4.A, p. 2; BCMh 2016d, section 4.A, p. 2). Additionally, it includes independent housing with some personal care services, known as assisted living, and residential care for people needing 24-hour nursing supervision (Cohen et al., 2005, p. 11). Appendix 1 provides a detailed overview of the services and their costs.

The publicly funded services are designed to complement existing services such as community resources, self-care, and the support and care of family and friends (BCMh, 2016c, para. 1). The services are defined in several policy manuals. The *Home Health Services* policy indicates that health authorities are required to provide the following services: Case management; nursing; physiotherapy and occupational therapy; and social and recreational group activities for adults (BCMh, 2016d, section 4.A, pp. 1-2). Additionally, they are required to provide services that support clients in activities of daily living such as bathing, lifting, and nutrition support (Section 4.A, pp. 1-2). Clients in need of instrumental activities of daily living, which includes housekeeping, transportation, and grocery shopping are referred to services in the community (Section 4.B, p. 1). Some of these services, such as meal preparation, laundry, and cleaning may be provided as a supplement to other home care services if conducting these activities puts a patient at risk (BCMh, 2016d, section 4.A, p. 2; VCH, 2014, para. 1-2). Lastly, the health authorities are required to provide clients services based on their specific needs (Section 4.A., p. 1). These services are not further specified in the policy.

To be eligible for services, people need to have a chronic health condition that limits their ability to complete tasks without the help of others, or have health issues that can be treated in a home setting instead of a hospital (BCMh, 2016a, section 2.B, p. 4). Services can also be provided as respite for a caregiver (BCMh, 2016d, section 4.B, p. 1). Clients with the greatest need, which may be caused by lack of caregivers and community support, have priority to access the services (BCMh, 2016d, section 4.A, pp. 1-2). Clients' needs are assessed via an

extensive process which includes a visit, identification of available community resources, discussion of the client's goals, and the development of a care plan (BCMH, 2016a, section 2.D, p. 1). While nursing services are provided at no cost, clients are required to pay a daily or monthly rate based on their income for other home and community care services (BCMH, 2016c, section 4.D, p. 2; BCMH, 2016b, section 7.A, p. 1). Some services might have a fixed rate. If payment causes serious financial difficulties for a client, fees can be adjusted (BCMH, 2016b, section 7.B.1, p. 3). When the daily rate is higher than the cost of services purchased via a private provider, people are given a list of private providers and have the option to obtain services elsewhere (C. Vanderwal, personal conversation, December 4, 2015). All home and community care services are also provided by for-profit organizations whereby clients pay the full service cost.

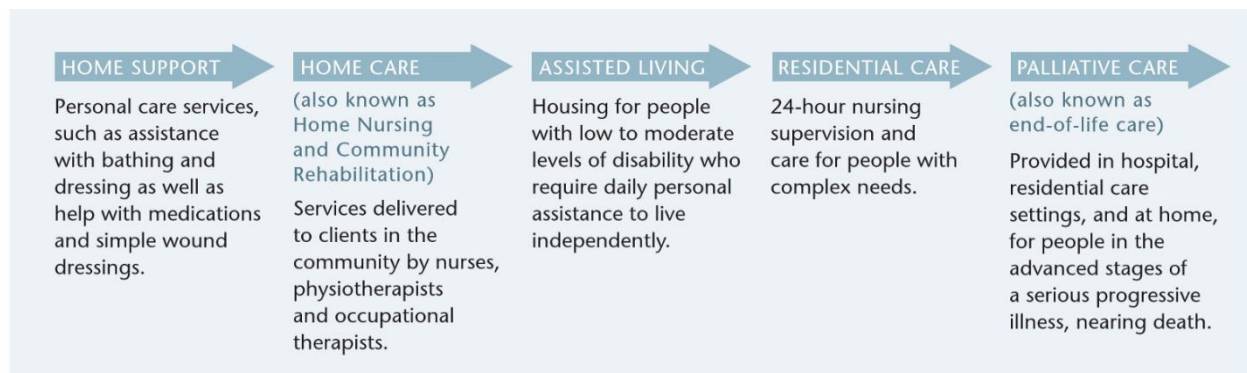


Figure 2. Overview of continuum of care. Adapted from *An uncertain future for seniors: BC's restructuring of home and community health care, 2001 – 2008* (p. 6), by M. Cohen, J. Tate & J. Baumbush, 2009, Retrieved from https://www.policyalternatives.ca/sites/default/files/uploads/publications/BC_Office_Pubs/bc_2009/CCPA_bc_uncertain_future_full.pdf.

Services in Powell River

The City of Powell River has a general hospital, a 102-bed residential care facility and a 75-bed extended care facility serving the Regional District (Powell River Division of Family Practice, 2015, p. 12). VCH provides all home and community care services in the region, but does not provide overnight care (Dr. D. May, personal conversation, August 19, 2015). A local private company, PR Home Care Services Ltd. (n.d., para. 1) offers home support services, supplemented by services to support instrumental activities of daily living such as transportation, meal preparation, grocery shopping, and complemented by pet care. In 2014, services costs were \$24.50 per hour for housekeeping, and \$26 per hour for personal care (Powell River Peak, 2014, para. 5). Two out-of-town companies, We Care and Independent Lifestyles, offer the same services as PR Home Care Services Ltd. (CBI Health Group, n.d.; Independent Lifestyles, 2014). In addition, they provide nursing and live-in care. Since January

2014, non-medical support services are provided by contractors and volunteers through the Better at Home program, a program funded by the Government of British Columbia (Better at Home, 2015a, para. 4, 7; Better at Home, 2015b, para. 1). Services include light housekeeping, friendly visiting, transportation, grocery shopping, yard work and minor home maintenance (Inclusion Powell River Society, n.d., para. 4). While Better at Home offers some services for a free, others have a fee based on clients' income (para. 5).

Service Accessibility

After the Royal Commission of Health Care and Cost's 1991 report predicting potential health improvements and cost savings, the priority shifted from care in hospitals and institutions to the community (Cohen et al., 2005, p. 12). Although this shift, combined with the aging population, should have resulted in an increase in home and community care services, the Canadian Centre for Policy Alternatives has identified a significant reduction in services, especially non-profit services, since the mid-1990s (Cohen, 2012, p. 6). Lack of services and resources have changed the focus from early intervention to crisis driven response, focussing on the frailest population (Vogel, Rachlis, & Pollak, 2000, para. 12). Between 2001/2002 and 2009/2010, the number of residential care beds has not sufficiently increased to compensate for the growth of the segment of very old seniors in British Columbia (Cohen et al., 2009, p. 6). In 2001, the BC government promised to have an additional 5,000 non-profit beds by 2005 (Cohen et. al., 2005, p. 17; Hunter, 2009, para. 3). This promise was later adjusted, shifting the date to 2008 and including for-profit and assisted living beds (Cohen et al., 2009, p. 7). After extensive research, Cohen et al. (2009, p.7) argue that only 3,500 beds were added while the adjusted deadline should have resulted in an increased number of beds to accommodate the increase of seniors between 2005 and 2008. Additionally, residential care and assisted living are not interchangeable, and the majority of the beds were developed by for-profit organizations (Cohen et al., 2009, p. 27). Most of the residential care occupants are unattached seniors, as shown in Table 2. In 2007, only 8% of the unattached men and 5% of the unattached women could afford a private residential care facility (Cohen et al., 2009, p. 13). It is likely that this has not improved over the years.

Characteristics	Descriptive	Home Care (%)	Residential Care (%)
Age	Assessed senior population age 85+	40	57
Marital Status	Not married	64	76
Functional Status (Activities of Daily Living Hierarchy)	Extensive assistance/dependence	18	74
Cognitive Performance Scale (CPS)	Moderate to severe impairment	14	60

*Table 2. Comparing residential care and home care clients, 2009 – 2010. Adapted from *Health care in Canada, 2011: A focus on seniors and aging* (p. 93), by CIHI, 2011. Retrieved from https://secure.cihi.ca/free_products/HCIH_2011_seniors_report_en.pdf. Copyright 2011 by CIHI.*

Cohen (2012, p. 6) estimates a total reduction of BC's home and community care services of 14% between 2001/2002 and 2009/2010. This reduction has resulted in an increase in patients that unnecessarily occupy a hospital bed, also called alternative level of care. Between 2005/2006 and 2010/2011 the number of alternative level of care days in British Columbia rose from 274,795 to 372,390, an increase of 35.5% (Cohen, 2012, p. 16). Many patients unnecessarily occupying beds are seniors. In 2011, 85% of these patients in Canada were older than 65 and 47% were waiting for a residential care bed (CIHI, 2011, pp. 115, 117). This problem also exists in Powell River's General Hospital, where on average 14 patients are waiting (VCH, 2015, para. 4). Although a new residential care facility expanded its beds early in 2015 (VCH, 2015, para. 1), this may not be sufficient to accommodate the anticipated growth of Powell River's senior population.

3. Literature Review

Between July 2015 and December 2015 a search was undertaken to locate published studies that would provide insight into the elements that contribute to people's ability to age in place, especially in a rural setting. The databases searched were Ageline, Academic Search Complete, and Google Scholar. The original search focused on the terms "seniors", "aging in place", "home", and "rural" and identified scholarly articles published in 2000 or after. Based on these articles, search terms were expanded and studies were included from the reference lists. Two articles published prior to 2000 were included. To be included, articles had to be published in English, available online, and focus on independent living seniors. Table 3 provides an overview of the search keywords.

<u>Population</u>	<u>Setting</u>	<u>Support</u>	<u>Other</u>
Senior	Aging in place	Informal support	Innovative
Elder	Community	Social support	Social isolation
Frail seniors	Neighborhood	Formal support	Healthy aging
Community-dwelling senior	Built environment	Non-medical support	Challenges
Independent living	Home	Informal caregivers	Barriers
	House	Formal caregivers	
	Housing	Care	
	Home modifications		
	Home adaptations		
	Rural		
	Canada		

Table 3. Keywords used in the literature search.

The first section of this review addresses the individual factors that affect seniors' ability to age in place such as their health and availability of social supports. The section is followed by a description of aspects of the physical environment that support and hinder seniors' independence. The third section describes the role of formal and informal care and the expectations for care needs in the future. A summary of the literature review closes the chapter.

Individual Factors

Seniors' ability to age in place depends on their health and the existence of a long-term illness or disability (Hillcoat-Nallétamby & Ogg, 2014, p. 1787). Although current seniors are healthier compared to previous generations, aging tends to come with health challenges such as chronic diseases, reduction of functional ability, decreasing strength, loss of vision and hearing, and a

reduction of short-term memory (Blodgett, Theou, Kirkland, Andreou, & Rockwood, 2014, p. 239; Fausset et al., 2011, p. 126; Iecovich, 2014, p. 21; Kerr et al., 2012, p. 43; Kirkland et al., 2015, p. 369; Oswald, et al., 2007, p. 96). Physical activity can positively affect seniors' health by reducing blood pressure, pain from arthritis, mortality, risk of falls, depression, hospitalization days; by potentially reducing the risk of Alzheimer disease; and by improving cognitive function (Kerr et al., 2012, pp. 44-45). Any activity, even for small periods of time, can improve health and reduce seniors' chances of becoming frail (Blodgett et al. 2014, p. 243; Kerr et al., p. 44). Since frailty increases the risk for falls, fractures, disability, and poor health (p. 239), this directly affects seniors' ability to remain independent.

Andrew, Mitniski, Kirkland and Rockwood (2008, p. 3) found that social vulnerability is influenced by seniors' living situation, social and leisure activities, empowerment, socio-economic status and social support. They further report that social vulnerability is directly linked to an increased mortality rate and tends to increase with age, being unmarried, having lower than average education, and suffering from a mild form of dementia (Andrew, Mitniski, Kirkland & Rockwood, 2012, p. 163). Strong social support, comprised of a system of formal and informal relationships, can result in a better quality of life, reduction in depression, lower mortality rates, improvements in self-rated health, increased activity and self-care ability, and reduced feelings of isolation (Clark & Leipert, 2007, p. 14; Steptoe, Shankar, Demakakos & Wardle, 2013, p. 5799; Tang & Lee, 2011, p. 445). Lack of income negatively influences social support as it reduces funding for transportation, participation in social programs, and funding for formal support (Clark & Leipert, 2007, pp. 15-16). Hillcoat-Nallétamby and Ogg (2014, p. 1784) found that seniors more frequently considered moving when they did not take part in local events or did not have regular contact with their neighbours. Aging also increases people's reliance on social support networks (Clark & Leipert, 2007, p. 14). Because frail seniors sometimes refrain from partaking in social events out of fear for injuries or falls, their network of social support can become smaller (Sixsmith and Sixsmith, 2008, p. 227). Maintaining a social support network can be more challenging for rural seniors due to the outmigration of youth, geographic distances between individuals and their support system, and lack of public transportation (Clark & Leipert, 2007, pp. 14, 15).

Physical Environment

According to Nahemow and Lawton's (1973, pp. 27-31) ecological model, people have successful interactions with their environment when it matches their ability and they will try to change it or improve their abilities when there is a mismatch, whereby unsuccessful adjustment hinders aging in place. Seniors who are not hindered by their home environment are more independent and in control, which positively affects their mental health (Oswald, et al., 2007, p. 103; Sixsmith & Sixsmith, 2008, p. 221). With aging, people generally spend more time in their

home, making the physical home environment an even more important consideration. For instance, seniors who are living in environments that are limiting will adjust their own activity and behaviour to match the limitations of their environment (Hillcoat-Nallétamby & Ogg, 2014, p. 1772; Kerr et al., 2012, p. 46; Tanner, Tilse, & De Jong, 2008, p. 198).

Tanner et al. (2008, p. 199) and Wiles et al. (2012, p. 358) present home as a union of three dimensions: the physical home, determined by the design and the raw materials; the social home, formed by the relationships with other residents and visitors; and the symbolic or personal home, a container of memories and the centre of feelings of security and belonging. According to Sixsmith and Sixsmith (2008, p. 244), the symbolic home is connected to feelings of privacy and control over space. Most houses are inappropriate for seniors due to their size, level of insulation, location, safety, and accessibility (Tanner et al., 2008, p. 196; Wiles et al., 2012, p. 358). Falls, causing the most accidental deaths in seniors over 75, are directly related to a seniors' housing condition (Sixsmith and Sixsmith, 2008, p. 221). Although seniors, especially renters, are more likely to consider moving when their ability does not match their home environment, social supports and community could partly compensate for physical limitations (Hillcoat-Nallétamby & Ogg, 2014, pp. 1784-1788; Wiles et al., 2012, pp. 358-361).

Home modifications, permanent physical alterations to the features of a home to improve suitability and reduce barriers, tend to compensate for seniors' physical limitations, increase independence, and support seniors in developing and maintaining social connections (Oswald et al. 2007, p. 96; Tanner et al., 2008, pp. 197, 204-205; Wiles et al. p. 358). Additionally, they can allow seniors to maintain their daily routine, which improves wellbeing and health (Oswald et al, p. 97; Tanner et al. 2008, p. 208). Some studies did not find a positive impact of home modifications on seniors' independence or injury reduction (Hillcoat-Nallétamby & Ogg, 2014, p. 1776). Oswald et al. (2007, p. 104) found that the number of barriers in a home do not determine the impact, but rather their severity. Seniors tend to dislike home modifications when they are not included in decision-making, when adjustments are linked to disabilities, or when the modification processes are disrespectful of the social or symbolic home and only focus on functional limitations (Tanner et al., 2008, pp. 206, 208-209). According to Nahemow and Lawton (1973, p. 30), a home environment with too few challenges could reduce seniors' competency over time. Additionally, modifications tend to lead to greater disability when they are made according to standard regulations rather than individual needs (Tanner et al., 2009, p. 209). For example, unnecessarily widening paths can reduce a senior's ability to walk in their home as the number of places to hold onto decrease. As people age, they become increasingly concerned about the maintenance of their home (Hillcoat-Nallétamby & Ogg, 2014, p. 1782). Fausset et al. (2011, pp. 126-134) report that seniors experience difficulties maintaining the outside (32%), maintaining the inside (16%), and cleaning their home (37%). They especially

struggle with heavy household tasks when living alone. While some seniors deal with these difficulties by ignoring the task (7%), the majority contracts others to do the work (52.5%) (p. 135).

Neighbourhoods provide a sense of belonging and connection, dictate accessibility to amenities and services, and influence social interactions, including participation in recreation, health, and physical activity (Kerr et al., 2012, p. 52; Michael, Green, & Farquhar, 2006, p. 738; Wiles et al., 2012, pp. 358-365). Many North American communities centre on car use, and this separation of residential and commercial areas discourages walking. Things that encourage walking among seniors include reduced distance to amenities, rest places, public transportation, streetlights, sidewalks, even pavement, safe crossings, and public toilets (Kerr et al., 2012, p. 46; Michael et al., 2006, p. 738; Sixsmith & Sixsmith, 2008, p. 228). Amenities increase seniors' appreciation of the neighbourhood, and while seniors appreciate the availability of parks, they frequently feel unsafe in isolated spaces and prefer recreation in areas with more people or supervision (Hillcoat-Nallétamby & Ogg, 2014, p. 1782; Kerr et al., 2012, pp. 48-49). Hillcoat-Nallétamby and Ogg (2014, p. 1784) found that seniors were less concerned about neighbourhood issues related to noise, youth and crime as they became older.

Transportation promotes seniors' independence and lack of public transportation tends to lead to an increase in social isolation and reduction in physical ability (Kerr et al., 2012, p. 51). Even in areas with adequate public transportation, seniors experience difficulties due to wait times, exposure to weather conditions, and the unavailability of public washrooms (Sixsmith & Sixsmith's, 2008, p. 227). These issues are more prominent in rural areas where public transportation tends to be unreliable or non-existent and seniors tend to walk less (Clark & Leipert, 2007, p. 15; Kerr et al., 2012, p. 46). For rural seniors, the loss of their ability to drive directly impacts their quality of life as it increases the risk of social isolation, leads to loss of social networks and limits access to formal support services (Butler & Eckart, 2008, p. 93; Clark & Leipert, 2007, p. 15; Kerr et al., 2012, p. 46). Even though driving in rural conditions can be more challenging than in an urban setting due to lack of streetlights, weather conditions, and challenging terrain, some seniors continue driving even after the loss of a driver's license (Clark & Leipert, 2007, p. 15). Seniors use taxis, but this service is not financially accessible to all seniors and getting in and out of a regular car can be challenging (Sixsmith and Sixsmith, 2008, p. 227).

Approximately 25% of American baby boomers are interested in a more communal way of living (Thomas & Blanchard, 2009, p. 15). Some seniors move into communities with shared facilities, and in some places with a higher concentration of seniors, communities are formed around the seniors. The Village model and Naturally Occurring Retirement Community

Supportive Service programs (NORC) are two models commonly used in North America to promote aging in place. The Village model is a member-led model that provides services, often with membership discounts, peer support, and information and referral in a certain community (Scharlach, Graham, & Lehning, 2012, p. 424). NORC programs exist in buildings or areas with a high concentration of seniors, are organized by service providers in collaboration with housing providers, and are funded by government and foundations (Greenfield, Scharlach, Lehning, A., Davitt, & Graham, 2013, p. 929). In contrast to the Village model, older adults do not lead NORC programs, but are seen as partners (p. 930). Both the Village model and the NORC program provide volunteer opportunities for older adults, which tend to improve self-rated health, emotional well-being and life-satisfaction, increase self-efficacy, and reduce risk of mortality and isolation (Greenfield et al., 2013, p.934; Graham, Scharlach, & Wolf, 2014, p. 92S; Scharlach et al., 2012, p. 424-425). Village members appear to know more people, feel more socially connected, be more aware about available services, have an improved quality of life, and have more confidence to age in place (Graham et al., 2014, pp. 95S-96S). While the Village model mainly caters to white middle- to high-income seniors aged 65-75, the NORC program services mostly low- to middle-income seniors 85 years and older and tend to be provided by staff (Greenfield et al., 2013, p. 933-934; Scharlach et al., 2012, p. 425).

Care and Caregivers

The policy focus on aging in place has caused an increase in formal care, defined as the delivery of domestic tasks and personal care by public, private, and volunteer organizations (Barret, Hall and Gauld, 2012, p. 362; Carrière, Keefe, Légaré, Lin & Rowe, 2007, p. 14; Keefe, 2011, p. 14). Volunteers from local community groups frequently provide services like transportation and respite, a role often taken on in rural communities by local churches and services clubs (Joseph & Skinner, 2011, p. 381; Skinner et al., 2008, p. 92). Joseph and Skinner (2012, pp. 381-382) describe volunteerism as the service between the formal and informal care, and refer to it as the local response to an increasing demand, lack of formal services, and reduction of government funding in rural communities. While rural residents tend to have a strong sense of belonging, higher participation in community life, and volunteer more, local service providers are uncertain if this can compensate for the lack of infrastructure and increased demand (Butler & Eckhart, 2008, p. 82; DesMeules et al., 2012, p. 41; Skinner et al., 2008, pp. 81, 96-97). There is fear that the government does not focus adequately on recruiting and retaining homecare staff, and conditions for homecare workers tend to be stressful with limited training opportunities, fluctuating work hours, poor pay, and lack of benefits (Keefe, 2011, pp. 25-26).

The provision of basic services alone does not guarantee an improvement of seniors' well-being, independence, and social inclusion (Barrett et al., 2012, pp. 369; Sixsmith & Sixsmith, 2008, p. 223). Within the philosophy of aging in place, home is a place where the senior is in

control, independent in community, and socially included (Barrett et al., 2012 p. 362). The delivery of formal homecare can be disempowering when seniors have to give up their own daily routine to accommodate the workday of a homecare worker (Barrett et al., 2012, pp. 362, 368; Hillcoat-Nallétamby & Ogg, 2014, pp. 1775-1776, Sixsmith & Sixsmith, 2008, p. 228). Seniors are forced to form new relationships with care providers, most of which are not reciprocal but reinforce a position of dependence and lack of power (Barrett et al., 2012, pp. 368-370). The current model of home care can be compared to residential care, but now provided in the isolated environment of home, which can lead to social exclusion of the senior and puts the senior in a powerless position. Transitioning out of this powerless position only occurs when seniors are given control to customize support to include tasks they deem necessary, like posting mail or cleaning windows, even if these tasks fall outside of what is regularly on offer (Barrett et al., 2012, pp. 363-372). While it is recommended that care should focus more on the development of a strong relationship, this can increase the potential for abuse of the care receiver (pp. 371-373).

Spouses, family members, friends, and neighbours who provide services to a person in need of care or support without receiving payment are called informal caregivers (Keefe, 2011, p. 4; Roth et al., 2015, p. 310). Informal caregivers support seniors to age in place (CIHI, 2011, p. 76; Lopez-Hartmann, Wens, Verhoeven, & Remmen, 2012, p. 2; Tang & Lee, 2011, p. 445). Table 4 provides an overview of the type of care provided by informal caregivers.

Type of care	Proportion performing this task		Among those performing this task, proportion who do so at least weekly	
	Women ¹	Men	Women ¹	Men
Personal care	37	17*	74	75
Tasks outside the house	33	53*	59	52*
Tasks inside the house	57	32*	73	73
Transportation	80	82*	64	63*
Medical care	25	14*	81	77
Care management	42	33*	64	62*
Total number of caregivers, Canada ('000s) (weighted)	1,539	1,161		

¹ Reference group;

* Statistically significant gender difference (when comparing 99% confidence intervals)

Table 4. Type of care by percentage of women and men 45 and older. Adapted from *Supporting caregivers and caregiving in an aging Canada* (p. 19), by Keefe, J., 2011, Retrieved from <http://irpp.org/wp-content/uploads/assets/research/faces-of-aging/supporting-caregivers-and-caregiving-in-an-aging-canada/IRPP-Study-no23.pdf>. Copyright 2011 by IRPP.

Most informal caregivers wish to provide care themselves instead of having formal caregivers enter their home. This is particularly true for rural caregivers due to both a stronger desire to protect their privacy and a lack of available services (Casado et al., 2011, p. 531; Hollander, Liu, & Chappell, 2009, p. 49; Morgan et al., 2002, p. 1130; Skinner et al.; 2008, p. 95). The Canadian demand for support services will almost double over the next 30 years, while the availability of informal caregivers will decline (Carrière, Keefe, Légaré, Lin & Rowe, 2007, p. 14; Keefe, 2011, p. 14). The decline is caused by a range of factors including: a reduced fertility rate, a lower number of marriages, a higher number of divorces, an increase in lone parents, the need for both parents to work outside of the home due to low-income jobs, increased mobility, and the wide spread of families (Keefe, 2011, pp. 13, 23; Roth et al., 2015, p. 310). The outmigration of rural youth and lower incomes in rural areas also contribute to the reduction of rural informal caregivers (Clark & Leipert (2007, p. 15).

The emotional, physical, and financial distress on caregivers is one of the main reasons for institutionalization of care recipients (Iecovich, 2008, pp. 309, 310; Lopez-Hartmann et al., 2012, p. 2; Parks & Novielli, 2000, para. 5, 8). In British Columbia, 29% of caregivers are in distress (Office of the Seniors Advocate British Columbia, 2015, p. 8). There is also a direct correlation between caregivers' stress, the amount of care provided, and the characteristics of the care receiver and the caregiver such as their gender, age, race, education and income (CIHI, 2011, p. X; Mittelman, Brodaty, Wallen, & Bruns, 2008, p. 898; Office of the Seniors Advocate British Columbia, 2015, p. 8). Figure 3 shows the relationship between number of hours of informal care and feelings of distress.

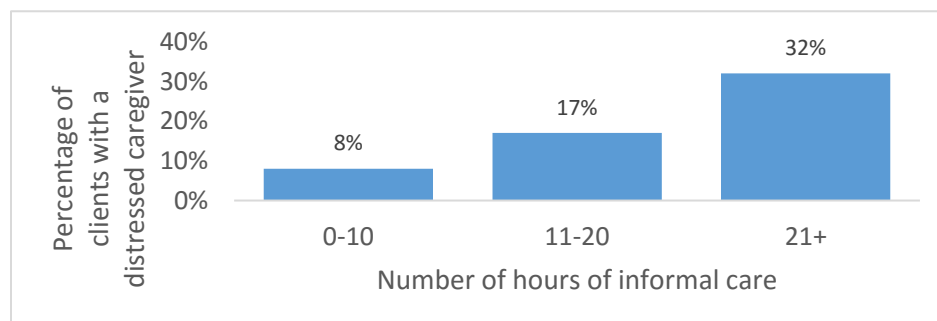


Figure 3. Impact of hours of informal care on caregivers experiencing distress. Adapted from Health care in Canada, 2011: A focus on seniors and aging (p. 77), by CIHI, 2011, Retrieved from https://secure.cihi.ca/free_products/HCIC_2011_seniors_report_en.pdf. Copyright 2011 by CIHI.

Caregivers are more likely to experience distress and a lower level of wellbeing when caring for a person with depression, behavioural problems, or significant cognitive impairment, while a

satisfying relationship between caregiver and care recipient positively affects caregiver burden and quality of life (Iecovich's, 2008, pp. 311-312; Office of the Seniors Advocate British Columbia, 2015, p. 8). Mittelman et al. (2008, pp 894-898) found symptoms of mild depression in close to 20% of Alzheimer patient caregivers and listed more symptoms of depression in female caregivers, caregivers with stronger responses to upsetting patient behaviour, and those less satisfied with the emotional help provided by family and friends. Caring for someone can isolate a caregiver, especially rural elderly female caregivers caring for their husband with dementia (Lopez-Hartmann et al., 2012, p. 2; Morgan et al., 2002, p. 1141). Rural seniors tend to have poorer health, less formal education, and lower income: all elements that negatively influence a caregiver's quality of life (DesMeules et al., 2012, p. 41; Bacsu et al., 2012, p. 77; Iecovich, 2008, p. 324; Keating, Swindle, & Fletcher, 2011, p. 330). Culture can also influence how caregiving is experienced and how the roles are divided (Iecovich, 2008, p. 311).

In 1993, caregivers providing an average of eight years of care experienced a loss of income, social security, and pension of more than \$650,000 over their lifetime (Metropolitan Life Insurance Company, 1993, p.3). Forty-four percent of family caregivers reported out-of-pocket expenses whereby 25% paid more than \$300 per month, which is often not compensated by Canada federal tax benefits or the National Employment Insurance policy (Keefe, 2011, pp. 8, 23).

Caregiving can positively influence psychological satisfaction and personal growth, but Roth et al. (2015, p. 311) indicated how years of mostly focussing on the negative impacts of caregiving has led to an inaccurate picture. With an exception of the relatively small segment of caregivers of dementia patients, caregiving generally does not lead to poorer physical health, but instead leads to a reduced mortality rate compared to non-caregivers (pp. 311-316). Caregiver stress may be caused by observing a loved one struggle with an illness rather than by providing care (p. 312). Although support services can reduce caregivers' burden and expand care recipients' ability to remain at home, such services target the care receiver and not the caregiver (Iecovich, 2008, p. 312; Roth et al., 2015, p. 310). Keefe (2011, p. 23) describes two type of support services for caregivers: direct support, for example respite and psychosocial support; and indirect support directed to the care receiver such as nursing care. Respite care is short or long-term relief for the caregiver and is provided via in-home support, out-of-home day programming, or temporary placement into a facility (Office of the Seniors Advocate British Columbia, 2015, p. 6). Psychosocial support focuses on increasing the self-management ability of the caregiver by providing, for example, counselling, training, and information (Lopez-Hartmann et al., 2012, p. 11).

The outcomes of the different services vary. For example, adult daycare tends to reduce the burden for caregivers of Alzheimer patients, but not for other caregivers (Iecovich, 2008, pp. 312, 314-315; Lopez-Hartmann et al., 2012, pp. 5, 10). Respite care tends not to improve caregivers' quality of life, anxiety or financial burden. All support services tend to improve depression, and no significant differences were found in the level of burden and quality of life for caregivers of physically disabled seniors receiving homecare from live-in workers, live-out workers, or daycare centres. The order of support can improve effectiveness. For example, information and training tends to be more effective after caregivers' emotional needs have been addressed (Mittelman, Brodaty, Wallen, & Bruns, 2008, p. 8). Hence, an individualized approach using a combination of different services that fit the caregiver's needs is more effective in reducing caregiver burden and improving well-being (Iecovich, 2008, pp. 312, 325; Lopez-Hartmen et al., 2012, p. 14). To prepare and support caregivers in their role, they should receive appropriate information and tools, be an integral part of the healthcare system as strong and knowledgeable partners, and have informal networks to support them (Roth et al., 2015, p. 317).

Rural seniors and caregivers face additional barriers such as lack of sufficient services, guilt about service use, limited service accessibility, and unawareness, all of which impact seniors' ability to stay longer at home (Bacsu et al., 2012, p. 83; Casado et al., 2011, p. 531; Morgan et al., 2002, pp. 1130-1135; Sixsmith & Sixsmith, 2008, p. 228; Tang & Lee, 2011, p. 452). Especially in rural communities where there is less privacy and service providers are known, stigma around dementia is another barrier, which can result in not accessing services or a delay in institutionalization until urgent placement is needed (Casado et al., p. 547; Morgan et al., 2002, pp. 1113-1140).

Summary

The literature suggests that there are multiple factors that affect seniors' ability to age in place: individual factors, physical environmental, and the availability of formal and informal care. While aging commonly comes with health challenges, such as chronic diseases, reduction of functional ability, decreasing strength, loss of vision and hearing, and a reduction of short-term memory, health is directly influenced by seniors' physical activity level and social vulnerability.

Seniors' physical environment, determined by their home, neighbourhood, and access to transportation, influences their level of physical activity and social vulnerability. The distance to amenities, rest places, public transportation, streetlights, sidewalks, even pavement, safe crossings, and public toilets are of great importance. When abilities do not match a senior's environment, home modifications can improve the interaction with their environment, but only when seniors are involved in the decision-making and the changes are based on their needs.

Communities, intentionally or naturally occurring, play an important role in increasing service access and provision of volunteer opportunities for older adults, which positively affects their health.

With an increased focus on aging in place, the need for formal and informal caregivers is expected to increase while the availability of care providers is anticipated to decline. The decline of informal support is caused by several factors, including a reduced fertility rate, an increase in lone parents, low-income jobs, and spread of families. Improvement of working conditions for formal caregivers, empowerment of care recipients, sufficient individualized support and financial aid for informal caregivers could counter the decline. Individualized support for informal caregivers could also reduce caregiver burden, which is especially prominent in caregivers of Alzheimer patients. Lastly, literature mentions additional barriers for rural seniors to aging in place such as lack of transportation, limited access to amenities and reduced availability of formal and informal care providers. The loss of their ability to drive increases the risk of social isolation and loss of social networks, and decreases access to formal support services.

4. Methodology

The research design is a case study, which is well suited to address an exploratory research question that focusses on a current event of a complex social condition like aging in place (Yin, 2014, pp. 4-12). Qualitative information obtained from interviews and observations served as data, with Powell River as the unit of analysis, and seniors as the observational or embedded units (Patton, 2015, pp. 262, 383; Yin, 2014, pp. 53-55). A focus group interview enriched the information. Focus group interviews can create a safe environment to share information, enable interaction among diverse perspectives, and enhance data quality (Onwuegbuzie, Dickinson, Leech, & Zoran, 2009, pp. 2-3; Patton, 2015, pp. 447-478). Focus group participants were not specifically related to the cases but provided a community perspective. The observations, interviews, and focus group interview allowed for triangulation of data, permitting different angles and increasing credibility (Aaltio & Heilmann, 2010, p. 68; Patton, 2015, p. 661). Further triangulation occurred during a workshop, where the case histories and focus group results were presented and further analysed by the workshop participants. Ethical approval was obtained from the University of Victoria Human Research Ethics Board and from Vancouver Coastal Health.

Sample

A purposeful sampling strategy was applied to ensure participants that could provide valuable insights and information-rich replies were selected (Patton, 2015, p. 264). Four different groups participated in the research:

- Seniors were selected using an outlier sampling technique to ensure information-rich cases on opposite ends of a spectrum (Patton, 2015, pp. 277-278). The seniors were identified by VCH staff based on the criteria provided by the researcher. Seniors were eligible if they were living independently with some kind of formal and/or informal support. Two seniors were selected: one senior living in the centre of town and one living in a rural area. Originally the age requirement was set as over 75, however, this was adjusted to over 65 based on the availability of research subjects.
- Informal caregivers were selected to provide another perspective on the seniors' ability to age in place. They were identified by the seniors' network of informal caregivers and were eligible for participation if they had been providing unpaid care for at least three months at a frequency of more than one time per week.
- Formal caregivers were selected to provide a community-wide perspective on aging in place in Powell River based on their professional experience. Participants were selected from the researcher's professional network and by using a snowball sampling strategy, whereby focus group participants were asked to identify people working in a different area of the

senior-serving field (Patton, 2015, p. 270). Participants were eligible if they provided care or support to seniors and had at least six months' experience of working with seniors in Powell River.

- Executive staff of senior-serving organizations and local government were selected from the researcher's professional network based on their potential influence in changing seniors' ability to age in Powell River. Participants were eligible to participate if they held an executive role for a senior-serving community organization in Powell River or for the City of Powell River or the Powell River Regional District.

Recruitment

Vancouver Coastal Health staff invited two seniors to participate in the research based on the criteria provided by the researcher. After their initial agreement to participate, the seniors received an invitational letter explaining the research and an informed consent form, which was followed up with a phone call from the researcher. At the end of the interview, the researcher asked the seniors to give an invitational letter and an informed consent form to their informal caregiver, which was followed up with an in-person conversation or a phone call from the researcher. A total of two informal caregivers, one for each senior, were selected.

Invitations and informed consent forms were emailed to the five focus group participants, which included a family doctor, the Better at Home program coordinator, a home and community care worker, a nurse practitioner, and a case manager from VCH. Originally, more people (a telephonic nurse and another home and community care worker) were recruited to participate to ensure the minimum requirement for a focus group (Onwuegbuzie, Dickinson, Leech, & Zoran, 2009, p. 3).

The same recruitment method was used for the recruitment of the eight workshop participants, and all participants were able to attend. Workshop participants included: one members of City Council; the MLA representative; two Executive Directors of community or senior organizations; the manager of VCH Home & Community Care; the Director of Parks, Recreation and Culture of the City of Powell River; the Manager of Planning for the Powell River Regional District; and the Executive Director of the Powell River Division of Family Practice (who is the project client).

Instrument

A standardized open-ended interview was used to minimize variation in the questions and to allow the possibility to compare answers between the subjects (Patton, 2015, pp. 439-441). A different interview guide, including probes, was developed for each group of participants. The interview guides, and focus group and workshop questions are included in Appendix 2. Observations were used during the researcher home visit to develop a deeper understanding of

the seniors' physical environment and ability to adjust to potential obstacles to age in place. Observations were also used during interviews to observe non-verbal expressions (Patton, 2015, pp. 331-334).

Interviews, Focus Group and Workshop

A total of four interviews were conducted: the two seniors' interviews were conducted in person in the seniors' home. One interview with an informal caregiver was conducted in a public location and one by phone, due to the participant's initial hesitance meeting the researcher in person. The focus group and workshop took place in a neutral private location. Interviews included 12-17 questions and took between 25 and 60 minutes. The focus group included seven questions and the workshop included two core questions; both lasted 60 minutes each. Questions focussed on the need and availability of formal and informal support services, and obstacles and enablers to aging in place. The interviews, focus group, and workshop were audio-recorded and transcribed verbatim by a third party following a transcription guide. The researcher reviewed the transcripts for accuracy. Appendix 2 provides the interview guides, focus group questions, and outline of the workshop.

The informed consent forms were read and discussed prior to the beginning of the interviews during which all research participants were informed about confidentiality, the voluntary nature of their participation, and their right to withdraw participation and information until the moment of data analysis. Clarifying questions were answered and the consent forms were signed prior to the beginning of the interviews, with the exception of the phone interview. Verbal consent was provided prior to the interview by phone and a signed consent form was personally handed to the researcher on the same day of the interview.

Data Analysis

Data was examined using thematic analysis, a foundational method for identifying themes and patterns in qualitative data (Braun & Clarke, 2006, pp. 78-79). The interviews were analyzed from an interpretivist perspective (Crotty, 1998, p. 72). The themes were identified from the ground up, using an exploratory or inductive approach, which uses the data as a guide and not a theoretic or predetermined coding framework (Braun & Clarke, 2006, p. 83; Guest, MacQueen, & Namey, 2011, p. 7; Patton, 2015, pp 541-542, Yin, 2014, pp. 136-138). Transcripts of the interviews and focus group were read several times to generate a list of initial codes, whereby the researcher interpreted the data to identify underlying ideas and assumptions (Braun & Clarke, 2006, p. 84; Gudmundsdottir, 1996, pp. 300-302). A thematic framework was developed following Ritchie and Spencer's (1994, pp. 6-12) method of qualitative analysis, which was used to index, chart, and map the data. Themes were identified based on

importance to the research question (Braun & Clarke, 2006, pp. 82-87). A comprehensive description for each of the two embedded cases was developed based on the thematic analysis.

The two embedded cases, the analysis of the focus group and the results of the cross analysis of all data were presented to the workshop participants for verification as involving the intended audience increases the credibility of the data (Patton, 2015, p. 670). Workshop participants were also invited to suggest solutions to improve aging in place in Powell River.

Limitations

The research deals with a very frail population and finding seniors that were physically and mentally able to participate in the research was challenging. Originally, the research intended to compare the case of one senior who was successful in aging in place and one unsuccessful and living in a residential care facility. After the senior living in a residential care facility passed away shortly after the interview and prior to reaching out to the informal caregiver, no new senior was found. The researcher adjusted the age limit and selected a rural senior and a senior living in the centre of town to highlight the impact of the physical environment on aging in place and to ensure information-rich cases. One of the seniors was experiencing some mild cognitive impairment. To minimize negative impacts on the research data, topics the seniors could not recall or was somewhat hesitant about were verified with the informal caregiver. Lastly, finding informal caregivers was a challenge. Seniors were only able to indicate one informal caregiver wanting to participate in the research. Although this might have influenced the depth of the cases, the additional information provided by the formal caregivers complemented the cases sufficiently to provide a full picture.

Due to the size of the community, most of the focus group participants had prior established relationships with each other, and even though the groups were composed based on similarity in position, some power dynamics may have been in play. It is possible that not all participants were comfortable sharing controversial ideas because they feared potential impacts on their ongoing relationships. To mitigate this limitation, participants were given the opportunity to share additional thoughts via email with the researcher.

Although selection bias may have occurred because the researcher relied on her professional network and the network of the participants to select potential focus group participants, this risk is small as all public senior-serving organizations, and both the city and the regional district were included in the research. The only local government not included in the research was the Tla'amin Nation. During the course of this inquiry, the Tla'amin Nation was undergoing the major process of self-government implementation, so participation in this study was not practical at that time.

5. Findings and Discussion

This chapter provides an overview of the research findings and an analysis and discussion of the findings organized in four sections.

The first section presents two case histories, the first of Maria, a senior living in the centre of town, and the second of Maureen, a rural senior. The histories are based on interviews with the two seniors in their home environment as well as interviews with their informal caregivers (Maria's neighbour and Maureen's husband). Researcher observations during the home visit complement the interviews. Maria and Maureen are fictional names used to protect the identity of the seniors and their informal and formal caregivers.

The second section presents the findings of a focus group with five formal caregivers. The participants were selected from a group providing at least six months care or support to seniors in Powell River while being paid for their services.

The third section presents 13 themes that describe elements that affect Powell River seniors to age in place. Themes were established by the researcher based on the results of a collaborative workshop with eight executive staff of senior-serving organizations and local government representatives. The themes are presented in four clusters: *environmental aspects; support services; community; and individual factors*.

The fourth and final section presents the results of the research within the context of the literature consulted for this project in four key outcomes: *service access, social vulnerability, demand on seniors' finances, and demand on government resources*. The section closes with a preliminary model describing the interconnectedness between the themes and the four key outcomes. Figure 4 below provides a schematic overview of the data sources, the initial data collection methods, the resulting preliminary themes, the final themes resulting from the workshop, and the key outcomes.

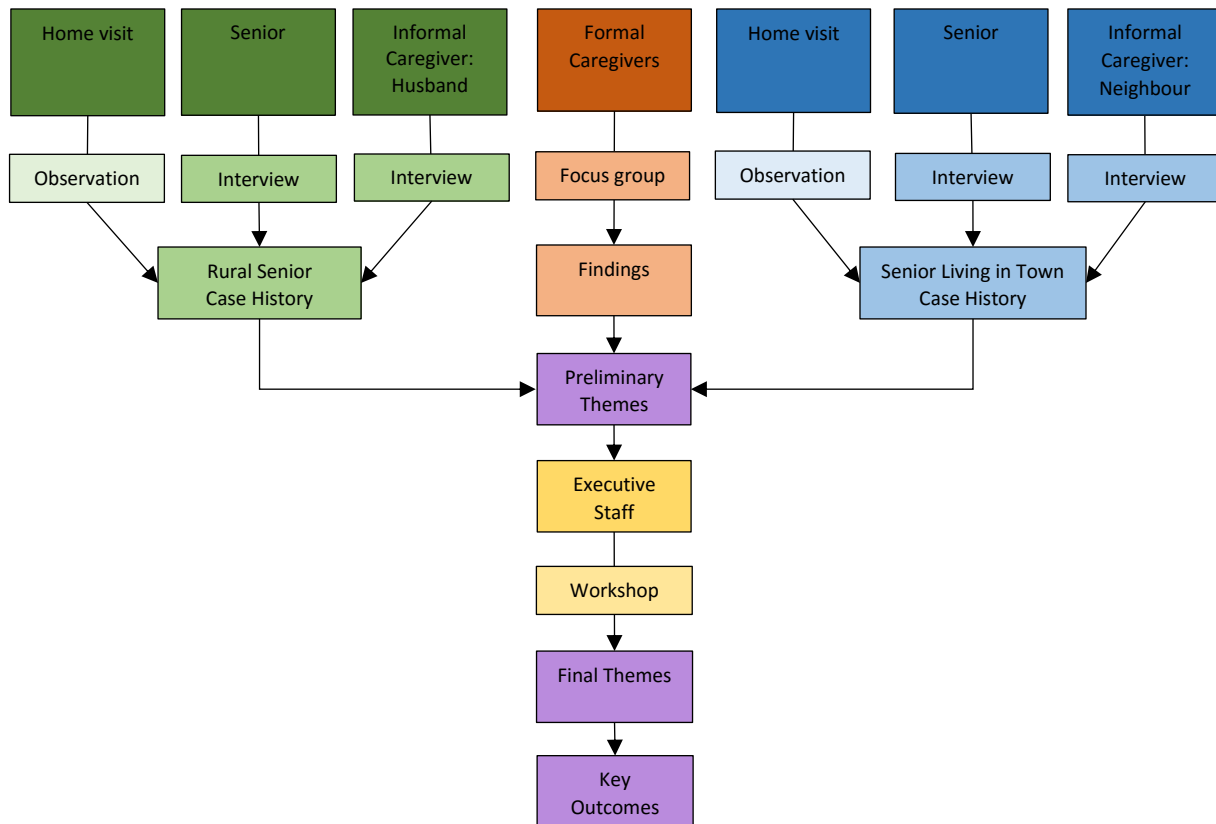


Figure 4. Schematic overview of the data-gathering components and analysis.

Case Histories

Maria

Maria is an 80-year-old woman who lives on her own in a small, older single-family home in the centre of Powell River. In 1980, Maria emigrated with her husband from Europe to Canada where they settled in the Cheakamus Valley. As her husband “was not much an educated person...and his language was more like men speak, like coffee shop people,” she used the Encyclopedia Britannica to learn English herself. She describes how they “lived there in wild . . . for several years” until “things were not going well, financially,” and they moved “out of the wilderness” to Squamish where they started a butcher store. The business was unsuccessful and they sold everything in 1985 and moved to a trailer in the Comox Valley on Vancouver Island where her husband’s brother lived with his wife and children. Maria moved a few times but stayed in the area for more than 25 years while her husband found work in different communities on the island and later in Enderby.

Because Maria was not comfortable driving in a foreign country, she was unable to visit her husband when he became sick while living in Enderby. Even though Maria and her husband,

who never had children, had lived apart for most of the time and she had not seen him much the last years before he died, when he passed away in 2008 it had a great impact on Maria. “All of a sudden I felt that he wasn’t there anymore . . . and felt so alone.” Her friend advised her to get a cat and the animal gave her a lot of comfort. A long-time friend she knew from her time in the Cheakamus Valley, where they had experienced a large flood together, had previously moved to Powell River where she rented out a home. One day she invited Maria to come and live in Powell River. Friends helped her pack and on August 11th, 2011, Maria moved to Powell River where her long-time friend became her landlady.

Although Maria did not drive, she was “pretty mobile” when she first came to Powell River. Her neighbour recalled how Maria “walked a lot around town...with difficulty, but she was curious about Powell River and liked to walk.” She used to walk to the library with her walker to borrow classical music and took a taxi to help her with grocery shopping. In June 2012, Maria broke her hip. Early that morning she was not feeling well and, while standing still, she suddenly fell. “I think the hip broke and because of the break I lost all my balance and flipped over on one side of my body,” Maria recalled. She was able to roll to the telephone with her legs tightly together and called her landlady, who rushed over from the other side of town to let in the ambulance staff. Maria was sent to Vancouver Island for surgery and jokes how “the ferry had to wait for your majesty.” The rehabilitation was successful and, though she continued using a walker due to balance issues, she was able to walk by herself and did not receive any support services. Slowly, however, walking became harder due to arthritis in her spine and the 300 meters to the library became too far. Shopping became too difficult too, because, as Maria indicated, “these stores are so big, man, I cannot walk that distance anymore.” Even when she was going out with her walker, according to a neighbour “the streets aren’t really set up for that, we don’t have a sidewalk [and] it is very rough out on the roads.” At places with sidewalks, the roads can be very steep or “you have a driveway let down...and the walker goes on a slant into the driveway.” Her neighbour recalled how Maria lost most of her mobility in the summer of 2013. Since then her health has further declined. “I have never seen as many doctors in my life as now,” said Maria laughing. She has been diagnosed with cancer, but remains optimistic: “you can trust the doctors these days . . . They can give operations and that they can take the problem away.” Although she knows she may die, she is not afraid of death as her faith gives her strength. “No matter what happens, I cannot really die, my body can, but not me,” explains Maria.

When asked about her independence, Maria laughed and wondered how independent she actually is. “I really have good home support,” Maria said. They come every morning to help her get dressed, “although, I can do a lot still myself, but it is awful tiresome when you have to do everything while standing on one leg or so you know. It is not so easy.” She ensures the door is

open every morning before 9:00 am to let them in and waits for them while sipping her cup of tea. Besides help with getting dressed, home support does her dishes. Once a week she gets washed “because I don’t dare to do that alone anymore.” She declined having home support come in the evening to undress her, because the fixed times does not fit her personal schedule. Maria wants to have the freedom to go to bed earlier or stay up later to have a visit with her neighbour or listen to the radio. In addition to home support, Maria receives Meals on Wheels three times a week, which they place on a little table right at the door, a table Maria can move to her chair to eat. Maria also has a housekeeper come in once a week to clean the house and pays a woman who runs a small home-based business to do her groceries and take her to doctors’ appointments out of town.

Maria receives informal support from several different people, one of whom is her 72-year-old neighbour who was born and raised in Powell River and who she “met over the fence.” According to her neighbour, “We both have the same beliefs in the Lord Jesus Christ . . . and she’s got a remarkable knowledge of the Bible . . . so that’s a lovely thing between us.” She also adds how “she is a very nice person [and] nice to be with.” She visits seniors as well in both the Extended Care Unit and Willingdon Creek, but besides visiting Maria, she picks up some groceries for her and takes her for rides to local doctors’ appointments, or out for dinner or lunch. Another neighbour across the road checks in on Maria occasionally and sometimes runs errands. Every Sunday someone picks Maria up to go to church or church events, but evenings especially “make her tired.” In the first months after she lost most of her mobility a man, “an acquaintance of an acquaintance,” helped with shopping and doctor appointments. She stopped his services when she got to know more women, as it is “better to be with ladies,” according to Maria. She and her long-time friends from Vancouver Island still call a lot. Maria also has one sister in Europe she phones sometimes for advice. “She’s a nurse, and although she’s younger, but she knows a lot,” said Maria. Maria’s cat died a few months ago. According to her neighbour the cat was a huge comfort for Maria, “you come home and there’s [cat] sitting there, you know, all cuddly and warm.” Maria brought up, “I would love to have cats around . . . because that fills your life . . . and you can enjoy them.” However, she knows taking care of a cat is physically too hard for her. Although, according to her neighbour, Maria “always has kind of an open door . . . a very welcoming space,” but she is “not sure that there are that many” who pay her a visit.

Although Maria is very pleased with the support she gets, her neighbour explained how “sometimes it can get to be too much if someone is coming in all the time.” “There are always little things that you wish someone would come and do,” Maria said. She has “said goodbye to these luxuries, because they are not important anymore. When you are this age, . . . many things are . . . not important, . . . like going out dancing or going to the parade. I’ve seen all the

parades, so to speak.” She stopped watching the news years ago and cancelled cable TV, “because I had the feeling I’ve seen all that, I’ve been there, all these wars, they’re just repetitive.” Other things were harder to let go, like “to play on the beach with your feet in the sand” and watch the sunset. Now she enjoys listening to her old classical music records. She has learned to recognize each instrument and exclaimed, “It is amazing that in your old age you can still enjoy these things and pick it up and store it somewhere.”

Currently the ten steep steps to Maria’s home are the major obstacle. Maria has only the energy to take them “once or twice a day.” The stairs have sturdy hand railings on both sides, which are very helpful. Although she used to take the stairs sometimes on her own to go to the end of the driveway where she “can watch the boats come in and so on, on a nice day” even when she knew it was “sort of dangerous” as the stairs are slippery, she now waits for someone to help her with the stairs. The house has a wheelchair ramp at the back installed prior to Maria moving in, but the ramp is slippery and too hard for her to push herself up with her walker or wheelchair. The doors in the house are too small for a wheelchair and all have a small sill, which are obstacles for the walker Maria uses in the house. The compact size of her home allows her to hold on to walls, furniture, and doorways when she moves without her walker. Her neighbour describes it as “that kind of walking around where you hang on to things,” which she describes as “dangerous in some way, [as] something might move” and Maria could trip. With the help of one of her paid helpers she has been able to get a bath chair, a raised seat for her toilet, and several walking aids from the Red Cross. Although they are on loan, Maria said, “they cannot come back because I need it every day, right. So I give a donation to the Red Cross and then I can use them permanently. And when I die they go back.” When moving around in her house, Maria has tied a small bag to her walker to ensure “that everything is at hand.”

Maria is aware that her memory is somewhat failing her. She finds it hard to recall places and asks several times “How’s it called again?” She exclaims, “Oh, that happens these days” and jokes how she used to know these things. Sometimes she cannot recall the English words and falls back on her mother tongue. She knows that if she needs to rely on a wheel chair, she cannot stay in her home. Her neighbour indicated how Maria “doesn’t like regimented things, and that’s why she’s putting off going into a home as long as she has” and she fears that Maria will not be able to “listen to [her] music quite loud.” She recently put her name on the waitlist for Kiwanis, an assisted living facility. “I am eligible for that now,” said Maria, but “there are seven before me.” Maria expects she has to wait at least half a year, which is a long time. “I phoned . . . once when I was in such pain, and I said ‘please don’t you have a spot for me in Kiwanis?’ but they could not help.” According to her neighbour “food to her is very important” and “she does not like . . . the hospital food,” which her neighbour thinks is served in the residential care facility and extended care, but not in Kiwanis. As she has not been able to visit

Kiwanis, Maria said, “I have no idea what it is, and how I will be treated and what I can expect.” She would miss the view from her current home, the sunlight in her living room and kitchen, and her balcony, but said “I expect I have the same visitors coming as I has now.”

Maureen

Maureen is a 66-year-old woman with a strong European accent who moved to Powell River in 2005 when her husband retired as a bus driver after 35 years of service. Maureen and her husband have been married for 45 years and have two children. They moved to Powell River from the Lower Mainland, where they had lived for 25 years. After visiting many other communities their realtor had suggested, “Why don’t you take the extra ferry and go to Powell River?” They fell in love with the quietness and the community feeling when they visited as well as the available activities. “In Powell River you can do as much [activities] as you want, or as little as you want,” her husband said. They bought a mobile home 15 km south of town, with a large garden close to the beach. Maureen’s daughter and her husband moved up to Powell River six-and-a-half years ago, but her son still lives in the Lower Mainland. Although Maureen is close with her sister and brother who live in the Lower Mainland, she said, “I have to make the journey, you know, always me, and [my husband].” She indicated that it is the same for her son. “You would think I was living in the other end of the world. But as they keep reminding us, we chose to live here.”

Six years ago, Maureen suffered from a severe stroke that paralyzed her on her right side and affected her speech. Maureen recalled, “I was 61, you know, a month after my birthday [laughs]. What a shocker . . . you still surmise you’ve got 20 years, you know, or 15 or something like that, and one day you wake up, eh, everything is changed . . .” Maureen was flown to Vancouver for a 48-hour treatment. She was sent back to the Powell River General Hospital to recover for a few months before she could go back to Vancouver for six months of rehabilitation.

“I didn’t feel sorry for myself when I had the stroke,” said Maureen. Many people she met at the rehabilitation centre were wondering why they were so unlucky. “Why *not* you?” Maureen said, “you are the same as everybody else.” Maureen, who had been taking care of people with disabilities for most of her life, thinks that her job might have prepared her for her stroke. Still, “[it] took a while to get used to, grieving [about] what I lost, which was myself, and [I] have to go on with my new self,” Maureen said. She mentioned how “you have to give up some things, you know, that’s been very hard for me.”

However, she focuses on what she can do and tries to maintain it. “You have to learn new techniques . . . you learn to adjust,” Maureen said laughing. With therapy, she has been able to

learn to speak again but her speech is slower and she cannot always find all words. "It was a severe stroke, and um, what's the...stroke is uh...keeping me from saying what I want....uh.... [inaudible] [Sighs]," Maureen explained. Her husband expressed, "She was a big talker, loved talking on the phone and all that kind of stuff and now she doesn't like being on the phone anymore." Communicating can be sometimes frustrating for both of them. "It is more difficult to understand some things," he explained, "she just can't talk the way she used to, so she gets left behind in the group talk, you know?" Maureen's difficulty and her own discomfort communicating have resulted in her losing touch with all her new Powell River friends. Maureen does not get visitors, and when her husband is at work her 11-year-old dog is her only company. "Without [my husband] I would have no company at all . . . People shy away from you . . . it's like you've got a contagious disease," Maureen said. Her husband confirms that the friends they have are "long-time friends . . . over on the Island and . . . in Delta." He adds, "If we made more of an effort, we could probably be more involved with friends that we've got here," but Maureen finds it difficult "making conversation when she is always at the tail end of it."

Maureen received physiotherapy after her rehabilitation but had to pay for these services after a short period. "There is nothing free about the healthcare system when you have a stroke," Maureen said. She paid \$30 for half an hour to 45 minutes of therapy at home. "Until my daughter needed money, support money for the family," Maureen explained, "so I gave up that, and paid the money to the family," she said. Not only therapy costs money, also braces and walking aids. "Pay your bills or you do without," Maureen said. Money has been tight with the Canadian Pension Plan (CPP), Old Age Security and her husband's pension. Maureen admits that finances are always on her mind and she only goes to therapy if really needed. "I have to think about it a lot, and have to be really uncomfortable [sic] in my body before I would allow myself to restart [therapy]," she said. Her husband currently works as a bus driver for the School District and the extended benefits package that comes with the work has been a great help as it provides discounts and some free therapy. Although he admitted, "I'd rather play golf," he enjoys the work and would probably have still done the work even if Maureen had not had a stroke. "It gives us time away from each other," Maureen said, "[and] that's important too."

Some of the services Maureen used to receive have been cut and she feels that this is partly the case because seniors are not appreciated. "We would go in on a Thursday morning, and there's a group of us, three or four, and have hand exercises, that was super good. They stopped it. It was too expensive. One hour a week and they [were] complaining about the OT being paid for that hour . . . they just cut and cut and cut. I feel the older you get, the less you get . . . hoping we'll die off and cost them no more money . . . that's how we feel, you know."

Currently, she does some hand exercises every week at a volunteer run-program at the stroke club. The volunteers find it hard to come up with things for them to do and there are not always enough volunteers. She does not partake in other club exercises, "because they are all old people," Maureen explains laughing. "I am not there yet, in my head." "If [I] have enough money," her husband added, "I'd like her to have physio, at least twice a week and the pool, in the hospital, that was what really helped her the most." Not getting her exercises affects Maureen's health. She "stiffens up a lot," according to her husband, but when she gets physiotherapy "she's in a lot better mood[because] she's not aching as much." Speech therapy is another thing Maureen says she could use, "We have no one for speech therapy at all." With the appropriate therapy, she added, "we would not give up and . . . could last longer, outside . . . not being institutionalised."

Maureen can cook small meals, but is unable to chop and clean and she gets tired quickly. "I try to do everything," Maureen said, "but I am limited with being paralysed on that side." Since the stroke, her husband has taken over these chores and laughingly Maureen explains, "he is getting better." "Without [my husband] here with me, I would never be able to cope by myself...I feel guilty about that, you know, because he is 70 years old now and he is working, as well as looking after me, and he is a cleaner...[laughs] he cleans with his eyes shut I think." Her husband added, "our daughter will come along now and again, but she's there for support but she doesn't do that much . . . She has got the kids and all that stuff, so, basically I am the one." Maureen is able to get dressed herself, but it takes her a long time and requires a lot of energy so her husband helps her. The only thing she is unable to do is tie her shoes. "When [my husband] was working out of town for three months . . . I had a neighbour, I paid her to come and tie my shoes every day," Maureen said. She also paid her neighbour to come, chop up everything and clean the house. During that time, Maureen had an alarm button. "She never really used that," her husband said, "but it was there if you needed." The alarm brought peace of mind, something that he is missing now when he is out in the community with his choir or playing sports. "If I want to go away or do a round of golf, I am always worried about how she's doing, because she's always doing things she shouldn't do." He added, "I always tell her don't do anything you can't get out of, but she still does it anyways." Maureen used to be an avid gardener. She still tries to do a little bit in the garden, but sometimes falls and her husband has to pick her up.

After her stroke, Maureen and her husband bought a computer to do memory exercises. She also uses it to entertain her grandchildren. "When they are here . . . we go on YouTube, and . . . the youngest one sits on my knee and we play Taylor Swift and Megan." It is her way of making the best out of the situation. Maureen explained, "[I] waited so long to be a grandma and I always pictured what I would do, you know, games and crafts or anything, and I can't do it."

She also took up online banking. “That’s good for me you know,” she mentioned, and adds that she would use it to go “online shopping [and] grocery shopping” if she would be by herself.

After the bathroom was adjusted and the bathtub replaced with a walk-in shower, Maureen does not consider there to be any obstacles remaining in the house. “I picked this house 10 years ago for that very reason,” Maureen said. However, the seven stairs to the front door are sometimes an obstacle. “It depends on my physical condition,” Maureen explained. “My knees are painful, but I can more or less do it, you know.” Maureen uses a walking stick, and a wheelchair and scooter for longer distances. She had to give up her driver’s license after her stroke. “No more driving, lost my licence, had to give it up and that was a hard break for me, because that meant freedom, independence. It’s like I am a nobody now.” Although the scooter can go up to 25 km, “[there] is nowhere to go except up and down the street,” Maureen said. “There is no sidewalk and it is risky, you know, the drivers in this town. It’s risky.” Because she lives south of town, there is no HandyDART. Maureen added, “South of town has no regular bus routes,” so her husband drives her everywhere. Sometimes they take the scooter in their van and they go to Willingdon or to the Lower Mainland. Maureen and her husband are planning to sell their home and move to a mobile park with a smaller garden closer to town. “It is nicer, and they are all over 55 in there,” her husband said. The main reason for the move is to enable Maureen to go out on her own. “It will give me more independence, I think,” Maureen said. “I could go to the library and go to the bank myself . . . or shopping.” She added that she would not care if people would stare at her. “I am not ashamed of how I am looking and I am not going to go away.” She also thinks that she would be able to visit a social club more often if she has her own transportation.

Maureen does not want to go into extended care. “I would rather die than go in extended care,” she said. “I’ve worked there: you don’t want to live there.” She thinks that she can stay independent as long as she remains healthy. She added, laughing, “I’ll be able to stay in my house as long as [my husband] doesn’t die.” “I’ll try not to die,” he replied laughing.

Focus Group

A one-hour focus group with eight formal caregivers was conducted, exploring the elements that affect aging in Powell River. Participants included a family doctor, the Better at Home¹ program coordinator, a home and community care worker, a nurse practitioner, and a case manager from Vancouver Coastal Health.

¹ A program funded by the provincial government providing non-medical support services such as light housekeeping, friendly visiting, and grocery shopping.

Focus group participants recognized the trend of older people moving to Powell River. There are “a lot of retirees coming here, and they have no family support.” “Just since Christmas alone . . . three people over 88 years old . . . [moved] here.” This trend is causing several problems. Some seniors are “struggling the minute they arrive” and require “services we can barely actually give them.” Others arrive healthy, but “they are probably 88-89 [and] they will [need services] soon.” “Usually around Christmas or the summer” staff at Home and Community Care get “bombarded with calls” from family members trying to arrange for services, which seniors sometimes cancel “as soon as family leave.”

Focus group participants identified loneliness and lack of social activities as an issue, especially “the one that cannot get out” can be “so lonely.” Seniors with a partner were less lonely. They noted that some schools encourage the creation of new networks through intergenerational programs by “getting the older population out into the school” or children into the care facilities to “read with the seniors,” as “a lot of these kids here do not have grandparents, and a lot of grandparents do not have grandchildren here.” One focus group participant suggested that the current high proportion of single-family homes may be contributing to isolation, as so many people live alone.

Although community and social activities were recognized as important, formal caregivers indicated that home care workers are “asked specifically not to include socialization as part of the service,” and instructed to ensure services are “task orientated.” A move into a residential care facility was identified as potentially “a lot more social than [staying home alone], especially since some of these people have been so lonely for so long, and all of a sudden they have people to talk to at mealtime...games to play and outings to go to”.

When seniors are managing fairly well at home, “sometimes a critical thing . . . happen[s] . . . like a fall,” which can rapidly change the situation. Things can also slowly deteriorate and people end up “not coping at home,” which surfaces in “nutritional decline, UTIs² because they’re not eating and drinking,” or for example “three hospital admissions in the last six weeks.” Overall, “cognitive impairment” was indicated as one of the major reasons people are not able to remain at home. “Physical impairment” causing an “inability to complete their ADLs or IADLs³” – basic household tasks and personal hygiene – also forces people into an institutional setting.

² Urine Tract Infections

³ Activities of Daily Living (ADL): such as bathing, dressing, and walking. Instrumental Activities of Daily Living (IADL): such as preparing meals, managing money, shopping, and performing light or heavy housework.

Participants identified stairs as major barriers, causing people to be “trapped in a home.” They estimated that at least 12 people in the community are “home-bound” and unable to “physically leave their homes.” Currently, the wait time for residential care is “six to eight weeks” and “two years” for assisted living. As of one year ago, people are no longer required to take the first available residential care bed if that bed is not available in Powell River.

“Previously, they would send people out and then you try to transfer them back and it would take you two years, three years to get them back.” People are attached to their housing and it can be “difficult to convince somebody to leave their home” even if “they would be better off somewhere else.” In some occasions, a “person refuses [help]” and chooses “to live at risk.”

Transportation was identified as “a big problem,” especially when living more remotely, as there are “a lot of problems with rural service.” For example, “on Thursday [the] rural bus does not run because it goes to Texada;” HandyDART is “not funded for outside of town;” and “the taxi service here does not have wheelchair accessible vans.” Transportation in town has issues too. If HandyDART is “booked that day,” “people cannot make appointments.” Transportation outside the community is an even bigger issue. Although Better at Home has volunteer drivers, it is hard to find volunteers who can go “out on the first boat [and] back on the last boat with someone they don’t know.” Even though the “ferry is covered” for medical transportation and a volunteer organization might be available to drive them on the island, many “do not have anybody” to take them over. As a result “patients that need to see specialist on the Island . . . do not go because they cannot.” There are “people who haven’t had a pacemaker checked in over three years because they haven’t got anybody to drive them to Campbell River.”

Focus group participants indicated that “Home and Community Care’s home support,” helps seniors stay longer at home. More specifically, they identified that seniors need “help with personal care and meal preparation, medication management” and “wound care.” In addition to home support services, an alarm button was identified as “one of the other things that [is] totally keeping people at home.” However, “it is not cheap . . . 36 bucks a month or something,” and some “are not going to pay that” or might not be able to do so.

While seniors require help with grocery shopping, Home and Community Care “[does] not provide the food, but . . . often will heat the food, and make them simple meals.” Some “stores do deliver . . . a couple of them do it for free,” and “some of the grocery stores will actually put the groceries away.” Although all home care services are available in Powell River, “there is a gap [in] overnight care . . . there is nothing from 10pm until 7am . . . unless you want to hire privately.” “There is a whole list of private . . . providers,” but seniors “have to vet them” and “it is hard to know their background . . . experience . . . education, [and] pricing.” When people require “120 hours a month,” the cost for home care is the same as residential care and

additional care is only provided in special occasions, for example, when people are palliative or waiting for a residential care bed. If “[more] hours are not approved, so the person does not get [the] help that they actually need . . . then a crisis happens, because [for example] they fall [and] they are admitted.” Some focus group participants were sceptical about the level of funding for support services. “We want to keep people in their home . . . Well technically, it’s cheaper, but they are not funding the Home and Community Care, giving them more dollars to be able to keep people in their homes.”

Focus group participants further indicated that caregivers could be supported by information, education or a caregiver support group. Some information and education is provided in the community through “FirstLink” and the “Cranberry Senior Centre.” Caregivers could also be supported by respite. There are two respite beds in the community to allow family caregivers a break for up to a few weeks. This was also identified as “a good way to acclimatize [people] to residential care.” However, access to respite beds is not always available. “They book pretty quickly and the same people will show up quite frequently.” Especially a more “timid person, who is already feeling a little guilty” or feel “harassed . . . that they can only go for a week” has more difficulty accessing the service. Respite is also provided at home, “just for a few hours at a time.” Participants suggested “you would have a lot more caregivers if you gave a little more freely respite.”

Participants mentioned service awareness as an issue for clients and for service providers and indicated how they “work in a bubble [and cannot] remember ever sitting down with everybody else at the table.” “Sometimes there might be some of the new GPs in town who aren’t aware of the services . . . Families do not know where to ask, and if the GP doesn’t know, they’re kind of the last line of service unless they happen to end in Emergency.” Focus group participants recognized that “it is hard . . . to tell [seniors] about stuff . . . cause you sure cannot email or they are not going to go to a website [and] it is also hard for them to pick up the phone.” They suggested “different avenues” to promote services like visiting them at their meeting places like “the A&W on a Sunday night when they have the jam session” or involving pharmacies.

Workshop

Executive staff from senior-serving organizations and representatives of local government were invited to participate in a workshop. Prior to attending the workshop they were asked to read the case histories and identify elements that affected seniors’ ability to age-in-place. At the workshop, participants were asked to write down these elements on sticky notes without sharing them with others. Participants were then provided with preliminary themes developed by the researcher based on the combined results of the case histories and the focus group. The

preliminary themes were organized in four clusters: environmental aspects; support services; community; and individual factors.

<u>Environmental aspects</u>	<u>Community</u>
Appropriate Housing	Importance of Community
Accessible Outside Environment	New to community
Transportation	Network
<u>Support Services</u>	<u>Individual Factors</u>
Adequate Support	Outlook on life
Awareness	Health
Technology	Finance

Table 5. Preliminary themes based on the results of the case histories and the focus group.

Workshop participants were invited to compare their notes to the preliminary themes. Their independent work showed significant agreement with these preliminary themes. Notes and themes that were unclear were discussed and clarified. Four notes (cultural barriers, education level, language barrier, and age) were consistent with the *Individual Factors* cluster, but were not reflected in the preliminary themes in this cluster. Appendix 3 presents photos of all the workshop participants' notes.

As a result of the workshop the preliminary themes were modified: one additional theme, *personal characteristics*, was added under the cluster *Individual Factors*; network was changed to *informal support*; and finance to *financial means*. Table 6 presents the final themes describing the elements that affect the ability of seniors in Powell River to age in place.

<u>Environmental aspects</u>	<u>Community</u>
Appropriate housing	Importance of community
Accessible outside environment	New to community
Transportation	Informal support
<u>Support Services</u>	<u>Individual Factors</u>
Adequate Support	Outlook on life
Awareness	Personal characteristics
Technology	Health
	Financial means

Table 6. Final themes describing the elements that affect the ability of seniors in Powell River to age in place.

In addition to identifying and comparing themes, participants were invited to add additional knowledge based on their own work experience and explore ideas for improving aging in place in Powell River. They explained how rural seniors can be very attached to their natural environment, as they are “really tied to the place they live and the nature around it [and] they are really used to that rural life style.” Moving into town for adequate housing or support has been especially hard for these rural seniors. They also identified the “lack of specialized services,” in particular a “geriatric specialist,” as a major barrier. Workshop participants noted that before seniors have a case manager, they “do not know how to get [to services]” and expressed how “there is not a coordinated approach,” and there is nobody who “advocates for [seniors] to get them into the system.” In addition, they identified that seniors lack information about grants, like the “Safer grant, the GIS grant, [and] PharmaCare.” Some participants mentioned an “unrealistic expectation” of free services in a time of increasing demands. When asked how aging in place could be improved, they suggested several ideas such as the development of a more accessible infrastructure with sidewalks, improved regional transportation, centralization of information to increase service awareness, recruitment of a geriatric specialist and adjustment of the residential attraction campaign. See Appendix 4 for a full overview of the suggestions.

Discussion

This section integrates cases histories, focus group and workshop results, and presents the outcomes within the context of the literature consulted for this project. The outcomes are organized under the following headings: service access; social vulnerability; demand on seniors’ finances; and demand on government resources. The section concludes with the presentation of a preliminary model that describes the relationships between the themes and the four key outcomes and illustrates their interconnectedness.

Service Access

The data from the case histories and the focus group reveals how lack of local services, absence of adequate transportation, and barriers in the physical environment lead to reduced service access. Seniors in Powell River are required to travel outside their community to access most specialized services. This requires a daylong trip involving ferries, which is even more challenging for seniors who lack a travel companion. A smaller social network caused by relocation at a later age to a new community could contribute to this lack of travel companions. The research also reveals obstacles for accessing local services. Stairs outside of the home entrance and the lack of accessible sidewalks combined with limited bus and HandyDART services, and the absence of a wheelchair accessible taxi services limits seniors’ ability to go independently to appointments. Additionally, some services, like respite and assisted living, have limited capacity and carry a waitlist.

These findings are in line with the literature consulted for this project. For example, Bascu et al. (2012, p. 83) and Morgan et al. (2002, pp. 1130-1135) described the lack of sufficient services in rural areas. Barriers to suitable transportation in rural areas were repeatedly reported and were linked to reduced service access (Clark & Leipert, 2007, p. 15; Kerr et al., 2012, p. 46; Morgan et al., 2002, p. 1130). The literature also linked inaccessible neighbourhoods to limited services access (Kerr et al., 2012, p. 46; Sixsmith & Sixsmith, 2008, p. 228; Wiles et al., 2012, pp. 358-365). The case histories make it clear that, in line with Oswald et al. (2007, p. 104), even one barrier in the home, like steep stairs, can have a severe impact.

Although not revealed in the case histories, focus group participants indicated pressure on home care services due to the shift from institutionalized care to community care. They also reported inadequate funding to support this shift and a more crisis driven approach on some occasions. Reduced service access can negatively affect seniors' health. These findings are in line with findings from Cohen (2012, p. 6), Joseph and Skinner (2012, pp. 381-382), and Vogel, Rachlis, and Pollak (2012, p. 6), who noted a reduction in community services in the province over the last decade, especially in rural communities.

Research participants mentioned a financial barrier to access services. Clark and Leipert (2007, pp. 15-16) described how lack of income reduces program participation and social support. In line with the literature, research participants indicate how the lack of service awareness among seniors contributes to reduced service access (Bascu et al., 2012, p. 83; Casado et al., 2011, p. 531; Sixsmith & Sixsmith, 2008, p. 228). The impact of service unawareness and the siloed operation of healthcare workers were also mentioned by focus group participants.

The research reveals the positive effect of informal networks and community-based programs, like Better at Home, by providing volunteer drivers. Joseph and Skinner (2011, p. 381) noted the large contribution volunteer organizations make, especially in rural communities, in the provision of non-medical support services.

Social Vulnerability

Barriers in the home and the outside environment and the lack of transportation increase social isolation and limit seniors' ability to maintain informal networks, which contributes to their social vulnerability. Sixsmith and Sixsmith (2008, pp. 222-228) described how a home can imprison seniors and increase isolation. The lack of longstanding relationships due to the immigration of seniors contributes to smaller informal networks and many research participants frequently mentioned loneliness among seniors as a major concern. The spread of families was recognized in the literature as a cause of the reduction in informal caregivers, which is

supported by the trend of in-migration of seniors in rural communities in British Columbia (DesMeules et al., 2012, p. 24; Roth et al., 2015, p. 310).

The case histories highlight the positive effects of social and cultural activities for both the senior and their caregiver, which is consistent with Andrew et al. (2008, p. 3), who found that leisure and social activities reduced social vulnerability. The positive impact of someone's economic status on their social vulnerability was demonstrated in the case histories by highlighting the senior's ability to pay for a taxi or go out with a friend. The case histories also show how seniors' personal characteristics and their outlook on life, their resilience, and ability to adjust to a changing situation reduces their vulnerability and supports them in developing and maintaining social networks and remaining independent. The desire for independence and control can motivate seniors to execute tasks without assistance, even if it puts them at risk. The literature consulted for the project indicated the influence of a caregiver and care receiver's characteristics such as gender, age, race, and education on caregiver stress (Iecovich, 2008, p. 324; Mittelman et al 2008, pp. 894-898). Andrew et al. (2008, p. 3) linked empowerment to a reduction in social vulnerability, which is in line with Barrett et al. (2012, pp. 363- 372), who described how seniors' wellbeing and social inclusion can only be improved when seniors have the power to control their own care. When seniors' health declines, it reduces their ability to maintain a social support network, which increases their social vulnerability and further affects their health (Andrew et al., 2008, p. 3; Steptoe, Shankar, Demakakos, & Wardle, 2013; Sixsmith and Sixsmith, 2008, p. 227).

Demand on Seniors' Finances

Research participants mentioned the increased demand on seniors' finances caused by the limited availability of subsidized or publicly funded support and transportation services. Seniors' limited awareness about grants contributes to an increased demand on their finances. The lack of an extensive network, potentially caused by frailty or being new to a community, increases the demand for paid services. Lack of income further affects service access and increases social vulnerability.

The literature consulted for this project did not directly discuss the financial impact of aging in place on care receivers, but discussed the increased expenses of caregivers (Keefe, 2011, p. 8). Several studies found financial distress to contribute to caregivers' burden, and indicated caregivers' burden as one of the main reasons for the institutionalization of care recipients (Iecovich, 2008, pp. 309, 310; Lopez-Hartmann et al., 2012, p. 2; Parks & Novielli, 2000, para. 5, 8).

Demand on Government Resources

The case histories show how limited service access and increased social vulnerability can increase seniors' dependence and can lead to a reduction in seniors' health. This can increase the demand on government resources, for example by increasing the demand for home and community care services and HandyDART or resulting in a premature move to a more expensive institutional setting. Additionally, the overall negative impact on seniors' financial means could increase the need for government's subsidized services.

Model

After analysis and consideration of the four sources of data, the two case histories, the focus group and the workshop, a preliminary model was developed as shown in Figure 5. The model provides a schematic overview of the relationship between the themes and the key outcomes of the research.

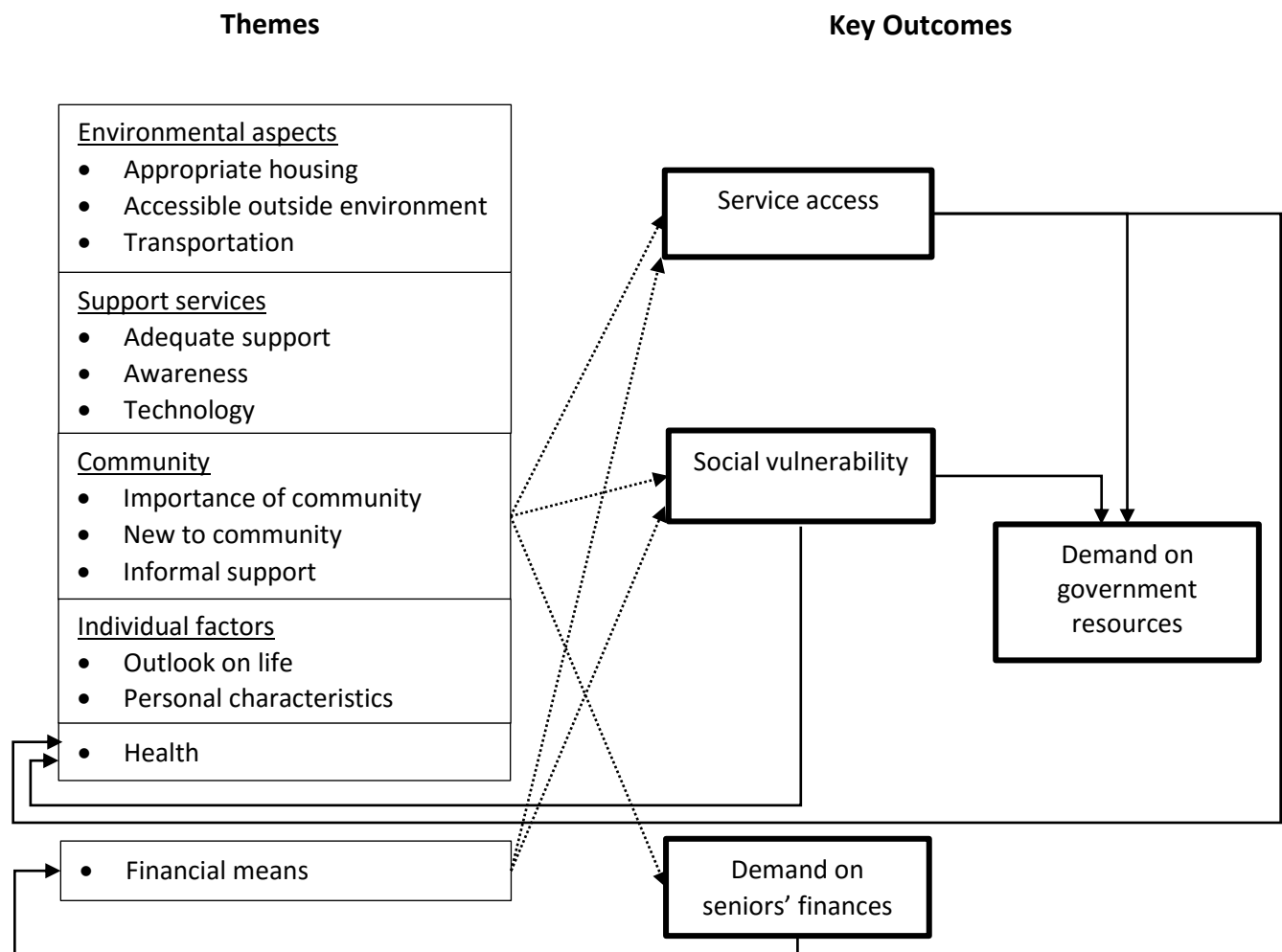


Figure 5. Preliminary model of the relationship between the themes, the key outcomes, and their interconnectedness.

The results of the four data sources – the 13 themes – are presented on the left side of the model. The four outcomes are presented on the right. The model shows how three of the outcomes – service access, social vulnerability and demand on seniors’ finances – are directly affected by 12 of the themes, which is illustrated by three arrows with dashed lines. The remaining theme, financial means, only affects service access and social vulnerability, as illustrated by two arrows with dashed lines. The fourth outcome – demand on government resources – is not directly impacted by these themes, but is indirectly impacted via service access and social vulnerability, which is illustrated by two arrows with solid lines. Service access and social vulnerability also affect seniors’ health, as illustrated by arrows with solid lines. Lastly, the demand on seniors’ finances affect a senior’s financial means, demonstrated by an arrow with a solid line

The model illustrates how all themes and outcomes are interrelated. Issues caused by any of the themes can affect service access, social vulnerability and the demand on seniors’ finances, and can increase the demand on government resources. Conversely, reduced service access and increased social vulnerability can negatively affect a senior’s health, shown on the left, which will further reduce service access, social vulnerability, the demand on seniors’ finances, and the demand on government resources. In addition, the increased demand on seniors’ finances will negatively affect a senior’s financial means, which will further reduce service access and social vulnerability, and will increase the demand on government resources. This circular connection between health and financial means, social vulnerability, service access and demand on seniors’ finances is highlighted in Figure 6.

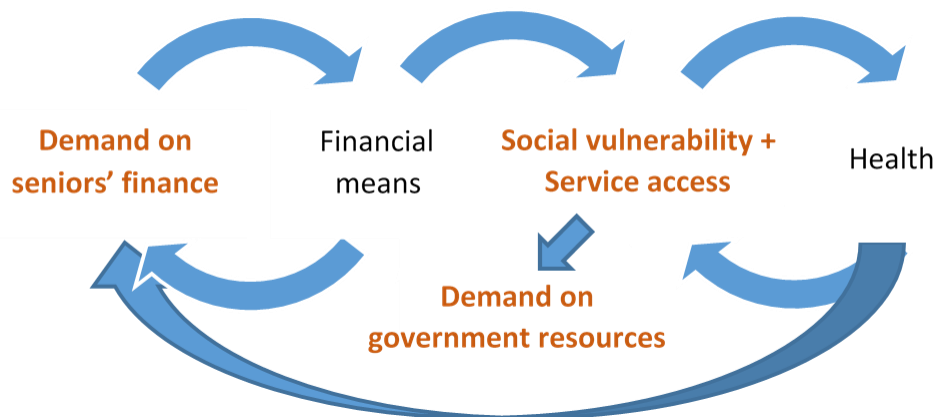


Figure 6. Circular connection among health and financial means, social vulnerability, service access, and demand on seniors’ finances.

The model shows how all identified themes can start a negative chain reaction that will ultimately centre on financial means and health. Each of the themes can positively affect service access, social vulnerability, and demand on seniors' finances, and can prevent a negative chain reaction to occur. While a seniors' health and their financial means might surface as the cause for seniors' inability to remain in their home, many other elements have most likely contributed to the need to relocate. If government wants to reduce the demand on their resources, it has a multitude of upstream options to do so. For example, it could ensure there is appropriate housing, an accessible outside environment, sufficient transportation, adequate support, service awareness, and technology. In addition, investing in a strong sense of community that supports the development of strong networks can also reduce the demand. Lastly, reducing poverty, which also affects people's outlook on life and their health, will further reduce the demand on government resources.

Summary

This chapter provides an overview of the research findings in the form of two case histories and the results of a focus group, and an analysis and discussion of the data. The first case describes the story of Maria, an 80-year-old woman who lives alone in the centre of town in a small home, accessible via a steep set of stairs. Maria receives support from Home and Community Care, neighbours, people from her church and paid individuals, for IADL and ADL services. Maria moved to Powell River in 2011 and was able to explore the town by foot until her health declined and the lack of sidewalks was an obstacle for her new walker. Maria is on the waitlist for Kiwanis, an assisted living facility.

The second case describes the story of Maureen, a 66-year-old woman who lives with her husband south of town. She moved to Powell River in 2005 and suffered a severe stroke six years ago, paralyzing her right side and affecting her speech, which partly caused her to lose her new friends. Maureen needs support putting on her shoes, preparing meals, and requires help with cleaning. Her 70-year-old husband, who works as a school bus driver, is her primary caregiver. Maureen is unable to visit places due to the lack of sidewalks and public transportation. Although required, Maureen does not frequently access therapy because of the costs. Maureen's only obstacle in the home are the seven stairs at the entrance. Maureen and her husband are hoping to buy a mobile home in town.

Formal caregivers participating in a focus group recognized that many older people are moving to Powell River. Often they are in need of support. Loneliness was identified as a common issue and Home Care as a contributor to aging in place. The mentioned how people stay at home until they were no longer able to cope due to cognitive and/or physical impairment. Some focus

group members were sceptical about the amount of funding available for home care services. The focus group participants estimated that at least 12 people in the community are home-bound, often as a result of stairs. They mentioned a wait list for residential care and assisted living. Lack of local services and transportation were identified as a big problem. Information, education, a caregiver support group, and respite could support caregivers. Service awareness, for both clients and service providers, was mentioned as an issue.

Based on the case histories and focus group data, 13 themes, describing all elements that affect Powell River seniors to age in place, were identified and divided into four theme clusters: environmental aspects; support services; community; and individual factors. The themes were established based on the input provided at a workshop by executive staff of senior-serving organizations and local government representatives.

When reviewing how these themes affect the ability of Powell River seniors to age in place, four key outcomes were found: service access, social vulnerability, demand on seniors' finances, and demand on government resources. Service access is affected by lack of local services, accessible transportation, funding, service awareness, sidewalks, travel companions due to relocation at a later age, the existence of stairs, waitlists, and the siloed operation of healthcare workers. Reduced service access negatively affects seniors' health. Community-based programs, financial means, and informal networks can positively impact service access. The research revealed how social vulnerability is affected by barriers in the environments, lack of transportation, lack of financial means, and lack of long-standing relationships. Additionally, it is influenced by seniors' personal characteristics and outlook on life. The limited availability of subsidized services, lack of awareness about grants, and limited informal supports place a demand on seniors' finances. Limited financial means decreases service access and increases social vulnerability, negatively affecting a senior's health. Demand on government resources can increase when people become socially more vulnerable and have difficulty accessing services because they potentially increase the need for healthcare or lead to a premature move to an institution.

The chapter closes with a model demonstrating the interconnectedness between themes and key outcomes. It shows how all identified themes can start a chain reaction that can force seniors to leave their home. It also shows how government has a multitude of upstream options to prevent seniors from leaving their homes and reduce the demand on government resources.

6. Recommendations

The purpose of this report was to answer the following research question:

How do local environmental aspects and informal and formal support systems affect the ability of Powell River seniors to age in place?

Nine recommendations are provided based on the literature, the research conducted for this report, input from the workshop participants, and the model described in Chapter 5. The recommendations focus on improving service access and reducing social vulnerability, because these outcomes are within the client's or community's power to change. With the exception of the first recommendation, the recommendations are not within the client's direct purview, but in the purview of other community stakeholders. These recommendations can be brought forward to collaborative platforms, such as the Collaborative Services Committee and the Powell River Healthy City Committee, to which the client belongs. The recommendations are organized by level of feasibility and expected impact as determined by the researcher.

Recommendation 1: Increase the use of telehealth

Increase the use of the telehealth equipment in the Powell River General Hospital to enable seniors to access specialist support in Powell River by taken the following actions:

- Coordinate resources with Vancouver Coastal Health (VCH) Rural Services for project support
- Develop a complete list of specialist services available through telehealth
- Work with VCH to develop guidelines for family physicians and patients on how to access the telehealth unit
- Explore the possibility to expand telehealth services to Texada Island Health Centre
- Increase awareness about the availability and application of the telehealth equipment among family physicians
- Support the implementation of the telehealth service

Recommendation 2: Increase service awareness

Approach the City of Powell River to take the following actions:

- Adjust the criteria of the Powell River Community Forest to allow for ongoing program funding
- Fund the PR Seniors Connect program, a program that will visit seniors at home to connect them to community services and programs:

- If community organizations have not been successful in securing a government grant for the PR Seniors Connect program, provide 1.5 years funding as of September 30, 2016, with a commitment for an additional five years after the program has demonstrated that seniors have increased service awareness and there is increased program participation;
- If community organizations have been successful in obtaining 1.5 years government funding as of September 30, 2016 for the PR Seniors Connect program, provide five years of funding starting March 31, 2018, after the program has proven its success in its first 1.5 years;
- Starting March 31, 2018, after the program has proven its success, seek pilot-program status from provincial and/or federal government and work with the provincial and/or federal government towards ongoing government funding.

Recommendation 3: Improve accessibility of the outside environment

Approach the City of Powell River and the Powell River Regional District to take the following actions:

- 2017: Adjust city bylaw 2225 in accordance with the 2014 Sustainable Official Community Plan by incorporating accessibility criteria according to the Complete Street principles for the outside environment (City of Powell River, 2014, p. 66);
- 2018-2020: Improve walkability in town by ensuring accessible sidewalks on both sides of the road within city limits;
- 2017: Review and adjust shoulder criteria to ensure new shoulders are scooter accessible and safe for scooters to use;
- 2017: Review and adjust the implementation plan for the upgrade of the shoulders in the rural areas as provided for in the Powell River Regional District Regional Transportation Plan, to ensure shoulders connecting stores and public spaces within scooter distance are accessible and safe for scooter use (ISL Engineering and Land Service, 2014, p. 42);
- 2018-2028: Upgrade all shoulders connecting stores and public spaces within scooter distance.

Recommendation 4: Improve transportation for people with mobility challenges

Approach the City of Powell River and the Powell River Regional District to take the following actions:

- Review national and international best practices for rural transportation for people with mobility issues;
- Make an inventory of all accessible vans in the community;

- Bring all organizations together that serve and represent seniors and people with disabilities to develop a local solution for transportation of people with mobility issues, particularly those living outside of city limits;

Recommendation 5: Strengthen community

Approach the City of Powell River to take the following action:

- Work together with the Powell River Community Foundation, the Powell River Community Forest and the faith communities to develop a neighbourhood strengthening program and grant based on best practices such as the Abundant Community Initiative in Edmonton or the Art of Neighboring in Arvada, Colorado.

Recommendation 6: Seek additional funding for home and community care services

Approach the Powell River MLA to take the following actions:

- Work together with the Provincial Seniors Advocate to develop a comparison between Powell River's Home and Community Care budget, the seniors population, and the demand for services compared to other communities in the province
- Collaborate with the City of Powell River and the Powell River Regional District to request Vancouver Coastal Health and the Provincial Ministry of Health adjust the funding of our local Home and Community Care in proportionate accordance with our high population of seniors.

Recommendation 7: Employ a geriatric specialist

Approach Vancouver Coastal Health to take the following actions:

- Develop a business case to prove the need and benefits of a local geriatric specialist;
- Request additional investment from Vancouver Coastal Health's central office and the Ministry of Health for the employment of a geriatric specialist.

Recommendation 8: Encourage the development of adaptable housing and use of universal design

Approach the City of Powell River and Powell River Regional District to take the following actions:

- Identify and implement policies to increase the development of adaptable housing and use of universal design;
- Educate the public, including builders, about the benefits of adaptable housing and use of universal design.

Recommendation 9: Focus the recruitment campaign on young families

Approach the City of Powell River to take the following actions:

- Shift the focus of the city's recruitment campaign so it focusses solely on attracting young families to balance the high percentage of seniors in the community;
- Engage with the business community (realtors) to shift their focus from promoting the community as a retirement community and attracting older adults to promoting a family friendly community and attracting young families.

7. Conclusion

Powell River seniors' ability to age in place is both hindered and supported by a wide variety of elements in their environment, support services, community, and individual factors like personal characteristics, their outlook on life, health, and financial means. This study demonstrates how all these elements affect service access, social vulnerability, and the demand on seniors' finances. It demonstrates how seniors' health and financial means play crucial roles in aging in place. Reduction in service access or an increase in social vulnerability is highly likely to negatively affect a senior's health, which reduces service access and increases social vulnerability, further affecting a senior's health and eventually reducing a senior's ability to age in place. Additionally, an increased demand on a senior's finances will negatively affect their financial means, which further reduces service access and social vulnerability.

The study makes it plausible that all elements ultimately affect the demand on government resources. For example, a decrease in seniors' health increases their use of the medical system and increases the need for home and community care, and the significant reduction of their financial means increases their need for subsidized services. Most significantly, the inability of seniors to age in place will force them to relocate to more expensive institutionalized settings. Hence, upstream investment to improve seniors' environment and support services decreases the overall demand on government resources.

This research reveals how the promotion of Powell River as a retirement community draws older adults to the community, causing the community to age faster than the rest of British Columbia. New senior residents' relative short time in the community negatively influences the strength and extent of their informal networks, and puts additional strain on the already limited rural services. This potentially causes more difficulties for all seniors to age in the community.

There are several opportunities within the purview of the Powell River Division of Family Practice (PRDoFP) and other community stakeholders to improve the ability of Powell River seniors to age in place, all related to improving service access and reducing social vulnerability. PRDoFP could increase the use of the existing community telehealth equipment, while community stakeholders could increase service awareness, improve accessibility of the environment, increase transportation options, strengthen community, increase local support services, and gradually change the community demographic make-up.

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Appendix 1: Glossary of Terms - Home and Community Care

Home health services

Adult day services: Organized recreational program in a group setting for seniors and people with disabilities (BCMh, 2016d, section 4.A, p. 2, VCH, 2014a, para. 1). The program can be offered to provide caregiver respite. Besides social programming, participants can receive health care and personal care such as bathing and medication management (VCH, 2014a, para. 4). Health authorities are not allowed to charge more than \$10 per day for programming and transportation (BCMh, 2016b, section 7.C.2, p. 1).

Home support services: Personal assistance with activities of daily living provided by unregulated providers (BCMh, 2016d, section 4.A, p. 2). Services are based on clients' needs and can include support with all activities of daily living (ADL) such as transfers, bathing, grooming and nutrition. Services can be supplemented by other tasks such as meal preparation, laundry and cleaning, to reduce or eliminate patients' risks (BCMh, 2016d, section 4.A, p. 2; VCH, 2014e, para. 1-2). Services can include respite care. Subsidized services are charged based on a client's income, however, they cannot exceed \$300 per month (BCMh, 2016b, section 7.B.2, p. 1).

Home care or community nursing service: Licensed nursing service provided at home for people needing acute, chronic, palliative or rehabilitative care (BCMh, 2016d, section 4.A, p. 2; Cohen, 2005, p. 10). Services focus on teaching clients and caregivers to manage their own care and clients and their families must agree to participate in self-care activities (VCH, 2014d, para. 2; BCMh, 2016d, section 4. D., p. 1). There is no cost for nursing services, however, after two weeks the client carries the cost for supplies (BCMh, 2016d, section 4.D, p. 2).

Assisted living: Independent senior housing with some personal care services; nursing is not included (Cohen et. al., 2005, p. 11). The housing is not suitable for people unable to manage their own lives nor for people with substantial physical and mental limitations (Cohen et. al., 2005, p. 11; VCH, 2014b, para. 4). Subsidized assisted living, which can be provided by non-profit and for-profit organizations, costs up to 70% of a senior's income and covers housing, two daily meals, laundry, cleaning, some recreational activities, and up to two care services (BCMh, 2016d, section 7.B.2, p. 2; Cohen et. al., 2005, p. 11; VCH, 2014b, para. 4). Market cost for rent, services and care determine the maximum rate for subsidized assisted living (BCMh, 2016b, section 7.B.2., p. 2).

Residential care: Housing for people with complex care, unable to live independently and requiring 24-hour a day nursing supervision (Cohen et al., 2005; p. 11; VCH, 2014f, para. 1). In VCH (2014f, para. 8), residential care costs up to 80% of a senior's income. The payment covers housing, meals, laundry, cleaning, recreational activities, nursing and personal care, and support for caregivers (VCH, 2014f, para. 2). The maximum payment set by the Ministry of Health on January 1, 2016, (Section 7.B.2., p. 3) for subsidized residential care was \$3,198.50 per month.

Appendix 2: Interview guides, focus group questions, and workshop outline

Interview guide for independent living senior

Introduction. Thank you so much for agreeing to this interview.

Would you mind me starting with a few questions about yourself?

- Could you please tell me how old are you?
- How long have you been living in Powell River?
- Do you need and get support so you can remain living in your home? If so, what kind of support?
 - Probes: Inside your house? Outside your house?
- Do you sometimes need help due to your health? What aspects of your health give you trouble to live independently at home?
 - Probes: overall health? Specific aspects of health?
- Are you receiving any support from people in your social network, e.g., friends, family, neighbours? If so, what type of support are you receiving?
 - Probes: Inside your house? Outside your house? Regular or Sometimes? Primary caregiver? Paid, unpaid?
- What role do the services you receive play in helping you stay in your home?
 - Probes: Feelings about independence? Feelings about security? Feelings about health?

Now I would like to ask some questions about your home and your neighborhood.

- Are there any obstacles in your home that make it difficult to live here? If so, what kind of obstacles?
 - Probes: Moving around?
- Are there any obstacles outside of your home that make it difficult for you to live here? If so, what kind of obstacles?
 - Probes: Moving around? Go where you want to go?
- How important is it for you to continue staying in your home in the future? Why?
 - Probes: Environment/home and neighborhood; relationships; Independence.
- In your opinion, what is the most important thing that would help you stay longer at home? Why?
 - Probes: Personal ability? Supports? Inside/outside home? Caregiver?
- What could be improved to support seniors to remain longer at home?
 - Probes: Supports? Inside/outside home? Caregiver?

Closure: Is there anything else you would like to tell me, or feel I haven't asked you that I should have?

Note: ask for a tour and look around for obstacles and home modifications

Interview guide informal caregivers

Thank you so much for agreeing to this interview.

The first few questions are about the support you and others provide for [name]:

- How long have you been providing support?
- What type of services do you provide? How often do you provide support?
- Is [name] receiving any other services that support living at home? If so, what kind of services?
 - Probes: Inside the house? Outside the house? Regular or sometimes? Paid, unpaid?
- Are there any aspects that make it more difficult for [name] to remain living at home?
 - Probes: Living situation? Health?
- What role do the services play in helping [name] remain in her home?

The next questions focus on the [name] living environment:

- Are there any obstacles in the home that makes it difficult for [name] to remain living there? If so, what kind of obstacles?
- Are there any obstacles outside of their home that makes it difficult to remain living at home? If so, what kind of obstacles?
- How important, do you think, is it for [name] to continue staying at home? Would you mind explaining why?
- In your opinion, what is the most important thing that could help [name] stay longer at home? Would you mind explaining why?
- In general what could help seniors in Powell River stay longer at home?

And now one question for you:

- Is there anything that would support you in your role as informal caregiver? If so, what?

If it is okay, I would like to close with a few personal questions:

- May I ask you how long have you been living in Powell River?
- And how long have you known [Name]?
- How would you describe your relationship with [Name]? Family, Friend, Neighbour.
- May I ask you what the reason was for you to start helping [Name]?
- May I ask you how old you are?

Closure: Lastly – is there anything I didn't ask you that you think is important for me to know in light of my research?

Focus group questions – formal caregivers

- What services are available that support seniors in Powell River to remain at home longer?
- What are the most common elements that force a senior to move into a residential care setting?
- What are the elements that could have been prevented?
- What could be improved to support seniors to remain at home longer?
- What could you or your organization do to implement these improvements?
- What role do informal caregivers play in supporting seniors to remain at home longer?
- How could informal caregivers be supported?

Workshop Outline

In preparation of the workshop, participants were sent the case history of the two independent living seniors. They were asked to read the cases while thinking about the following question: What affects Maria and Maureen's ability to age in place?

Workshop outline:

- Welcome and overview of the research
- Identifying themes:
 - 5-minute silent brainstorm, writing one idea per post-it note while answering the question: **What affects Maria and Maureen's ability to age in place?**
 - 5-minute presentation of main themes identified by researcher
 - 5-minute mapping of all the ideas under main themes, ideas that don't fit are placed under "other"
 - 5-minute adding new ideas based on their own professional experience
 - 10-minute discussion to categorize ideas that don't fit to ensure the themes are complete and accurate.
- Developing recommendations
 - 5-minute silent brainstorm, writing one idea per post-it note while answering the question: **What could we do to improve people's ability to age in place?**
 - 5-minutes to compare ideas with neighbour and eliminate duplicates
 - 15 minutes mapping all the ideas and grouping them to develop recommendations
- Next steps: Describing the follow-up steps for the interview and presentation back to the community

Appendix 3: Workshop results – Theme support



Appendix 4: Workshop results – Suggested improvements

Workshop participants were asked “What could we do to improve people’s ability to age in place?” The results are listed below.

Community

- Ensure the residential attraction campaign focusses on the attraction of young families
- Develop more recreational opportunities
- Financial assistance for services, free medical services, lobby senior government for resources
- Align health plans with needs of seniors

Environment

- Adequate Housing: Encourage room rentals and develop more assisted living options
- Accessible Outside Environment: Develop a more accessible infrastructure with sidewalks
- Transportation: Improve transportation in the entire region

Support

Adequate Services

- Coordinate services for the entire region and increase the potential entry points to the system
- Ensure all seniors have a family doctor
- Recruit geriatric specialist
- Increase the support and resources for caregivers
- Align volunteer effort with needs of seniors, for example recruit volunteers to provide more visits to seniors homes
- Have more flexibility to provide health care supports when seniors need it and increase home support options.

Awareness and access

- Increase the information about services, for example by hosting monthly seniors’ workshops for specific topics, promote services via local TV, a senior web page and a monthly calendar.
- Ensure information is centralized and enhance what is already there, for example via FETCH, the community health resource database

Technology

- Have a place in town that sells easier technology, for example remotes or answering machines that are easier to operate

Other

- Install a seniors' round table that can provide support to council
- Promote businesses in the senior care sector