The Impact of Cohousing on Older Adults' Quality of Life*

Vivian Puplampu,[1] Elise Matthews,[1] Gideon Puplampu,[2] Murray Gross,[3] Sushila Pathak,[4] and Sarah Peters[5]

RÉSUMÉ

La population mondiale vieillit, et c'est aussi le cas au Canada. Ce phénomène exige une planification en matière de logement afin de soutenir la qualité de vie des personnes âgées. La présente étude est la première à examiner l'impact de l'habitation communautaire sur la qualité de vie des personnes âgées au Canada. Vingt-trois participants ont été impliqués dans cette étude à méthodologie mixte. Les personnes âgées ont évalué très positivement leur qualité de vie, particulièrement dans les domaines environnemental, physique et psychologique du Questionnaire sur la qualité de vie (WHOQOL_BREF) de l'Organisation mondiale de la Santé. La qualité de vie dans le domaine social a étonnamment été jugée faible, considérant les résultats obtenus lors des groupes de discussion. Quatre thèmes, à savoir « l'appartenance à une communauté », « la vie en communauté », « les changements liés au vieillissement » et « le vieillissement sur place » ont émergé des données qualitatives en vue d'expliquer les facteurs influençant la qualité de vie des personnes âgées. Cette recherche fournit de solides preuves en faveur de l'habitation communautaire, une solution innovatrice en matière de logement qui permet de préserver la qualité de vie des personnes âgées.

ABSTRACT

The global population including Canada's is aging, which demands planning for housing that will support older adults' quality of life. This mixed-method study is the first Canadian study to examine the impact of cohousing on older adults' quality of life and involved 23 participants. The older adults rated their quality of life very high, especially in the environmental, physical, and psychological domains of the World Health Organization Quality of Life (WHOQOL_BREF) survey; quality of life in the social domain was rated low, which was surprising in light of the focus group data findings. Four themes of "belonging in a community", "life in the community", "changes associated with aging," and "aging in place" emerged from the qualitative data to explain factors that influence older adults' quality of life. This research provides foundational, strong evidence that seniors' cohousing is an innovative housing solution that can support older adults' quality of life.

[1] Faculty of Nursing, University of Regina, Saskatoon

[2] School of Nursing and Midwifery, University of Ghana

[3] YWCA Saskatoon

[4] Saskatchewan Health Authority, Shellbrook

[5] Saskatchewan Polytechnic and University of Regina, Saskatoon Campus

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La correspondance et les demandes de tirés-à-part doivent être adressées à : / Correspondence and requests for offprints should be sent to:

Vivian Puplampu, R.N., PhD.
Faculty of Nursing
University of Regina
111-116 Research Drive
Saskatoon, SK S7N 3R3
(Vivian.Puplampu@uregina.ca)

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Impact of Cohousing on Older Adults' Quality of Life

The number of older adults is increasing worldwide because of increased life expectancy and improved health technology (United Nations, 2018). The proportion of adults aged 65 years and older in Canada is 16.9 per cent, and it is estimated that one in four Canadians (23%) will be older than age 65 by 2031; the greatest growth will be seen in adults aged 70 and older (Statistics Canada, 2017). It is therefore essential to plan for housing that will accommodate the rising numbers of older adults. Housing options for older adults in North America, including long-term care institutions and assisted living, do not typically offer seniors the autonomy they have enjoyed as adults and, therefore, are not appealing to the current generation entering older adulthood (Critchlow, 2015; Kang, Lyon, & Kramp, 2012; Kramp, 2012; Young, Kalamaras, Kelly, Hornick, &Yucel, 2015). Furthermore, Weeks, Keefe, and Macdonald's (2012) study in Canada reported that older adults would prefer to stay in their homes rather than move to a new residence as they grow older.

Researchers including Charles Durrett, who introduced *cohousing* in North America, argue that there are instances when aging in place – that is, older adults living in their homes for their lifetime – is unrealistic because of changes in health, chores, finances, and isolation that would require older adults to move to alternate housing (Durrett, 2009; Kang et al., 2012). Seniors' cohousing is an innovative housing arrangement which increasingly has gained acceptance and been identified as a solution to address social isolation and promote older adults' quality of life as well as their healthy aging in place. Thus, the purpose of the study addressed in this article was to understand, using the results from a survey and focus groups, the impact of cohousing on older adults' quality of life. The literature review addresses the definition of cohousing and quality of life. In addition, we provide potential questions for future research.

Cohousing

Cohousing is a private living arrangement jointly planned, developed, built, owned, and managed by the residents to meet their living needs (Canadian Cohousing Network, 2017; Durrett, 2009; Mattern, 2015; Ruiu, 2016). Cohousing has its roots in Denmark, beginning with the first cohousing there in the 1960s (Durrett, 2009; Ruiu, 2016). In North America, cohousing began in 1988, starting in the United States followed by Canada (Ruiu, 2016). In Canada, there are 14 completed cohousing communities, 9 in development, and 12 now forming (Canadian Cohousing Network, 2019). There are only two cohousing communities exclusively for seniors in Canada, one in Saskatchewan and the other in British Columbia; however, older people are residing in multi-generational cohousing communities (Canadian Cohousing Network, 2017). The residents in cohousing communities own their personal units (consisting of bedroom(s), bathroom, kitchen, dining room, living room, and space for a washer and dryer) as well as share facilities which include the kitchen and dining room, workshops, guest rooms, arts and crafts areas, children's play room, laundry, and meeting rooms (Canadian Cohousing Network, 2017; Durrett, 2009; Mattern, 2015; Ruiu, 2016). In addition, cohousing residents are responsible for maintaining the shared facility which includes cleaning and repairing small damages (Mattern, 2015).

The benefits of cohousing reported in the literature include ready access within the building and to services in the cohousing community; contact with nature; mutual support; belonging to and engaging in a community; social interaction; autonomy; and acceptance of aging (Bigonnesse, 2017; Bigonnesse & Chaudhury, 2016; Glass & Vander Plaats, 2013; Kang et al., 2012). Although cohousing is documented to increase residents' social relationships and bonding (Ruiu, 2016), the impact of cohousing on older adults' quality of life is currently unknown.

Quality of Life

The World Health Organization's Quality of Life Assessment Group (WHOQOL, 1995) conducted a landmark study on the factors that contribute to older adults' meaningful quality of life and which formed the framework for this study (Figure 1). Quality of life (QOL) is defined as "individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" (WHOQOL, 1995, p. 1405). This definition demonstrates that QOL is subjective and influenced by multiple factors such as physical health; psychological state; social relationships; environmental factors; spiritual, religious, and personal beliefs; and overall health condition (Kalfoss, 2016; WHOQOL, 1995; WHOQOL-BREF, 1996).

Previous researchers have documented that physical functioning, including mobility and ability to perform activities of daily living (ADL) such as walking, feeding, bathing, dressing, and shopping impacts older adults' QOL (Xiao, Yoon, & Bowers, 2016). Xiao et al.'s 2016 study found that functioning (namely, ADL) and mental state (depression or lack thereof) were the key determinants of health-related quality of life (HRQOL), with older adults living in their own homes having a higher level of ADL and less depression than those in nursing homes. Emotional support

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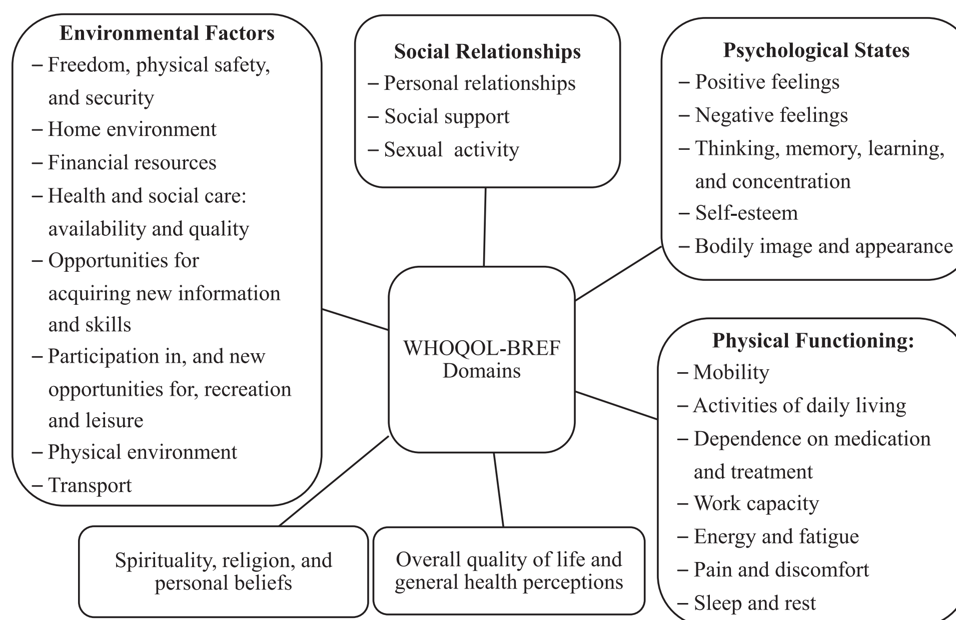

Figure 1: Factors influencing quality of life

Adapted from Kalfoss (2016) and WHOQOL-BREF (1996)

from friends and families associating with older adults contributes to better mental health and QOL (Belanger et al., 2016). There is evidence that the social context of where people live contributes to their quality of life as well. Older adults who have more social contacts and support systems and who are physically active have reported greater satisfaction with their lives (Bielderman, de Greef, Krijnen, & van der Schans, 2015; Kadowski, Wister, & Chappell, 2015).

Cohousing, especially cohousing for seniors, has gained more acceptance in recent years and has been identified as a potential solution to address social isolation and enhance older adults' QOL. Cohousing is characterized by, for example, regular contact with neighbors, shared meals, mutual support, social interaction, independence, and consensus decision-making (Glass, 2016). Currently, there is no documented research on cohousing's influence on older adults' QOL; consequently, the research question that guided our study was "What is the impact of seniors' cohousing on older adults' QOL?"

Methodology

Design

We used an explanatory sequential mixed-method design which involves first the collection of quantitative data, analysis of that data, and the use of the findings, which then informs the second phase – collection of qualitative data – to allow the integration of data (Creswell & Plano Clark, 2007).

Setting

There were 30 residents in the cohousing setting for this pilot study. One third of the residents (11) were younger than age 65. The research setting was a senior cohousing building in Western Canada, begun in 2008 and completed in 2012 (Mattern, 2015). At the time of data collection in 2017, the number of years residents had lived in the building ranged from two and a half years to five years. The majority of the residents (74%) were female. The building was approximately 25,000 square feet and had 21 units with seven units on each of the three floors along with the shared common spaces on the main floor. All the private units were accessible by wheelchair with wide doors and large washrooms for easy movement. Shared common spaces included a common house (kitchen/dining/meeting area), a common laundry, two activity rooms designed for arts and crafts and music, a large workshop, two guest rooms (with an accessible bathroom with shower), an exercise room (and sauna), and enclosed parking for automobiles and bicycles (along with storage and a recycling room). All walkways featured large windows with plenty of natural light and sitting areas. In addition, two shared decks were suitable for barbeques and sitting. The ground level featured a patio adjacent to gardens (raised and in-ground) and a fishpond. Residents organized many programs in the community including monthly potlucks, common meals, house concerts, dog walking, gardening, thrifting, painting group/shows, writing group/shows, and garage

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sales, all with the goal of bringing people together and keeping them active.

The community was self-managed. Residents volunteered to be part of the different committees which were in charge of various aspects of maintaining the building and the residents' welfare. The seniors' cohousing community was officially a condominium corporation, governed by condominium bylaws, with additional bylaws developed by the cohousing council to accommodate the community's functioning. For example, each household contributed $25 monthly towards a reserve fund for community upkeep. The council consisted of all household owners who met monthly to make decisions about their stay in the community.

Recruitment

Although older adults are considered to be individuals aged 65 years and older, as the research team we invited people who were younger than age 65 to participate in the study because of the small number of people in the building. We recruited participants after receiving institutional and community approvals; the collaborator (a researcher and co-author on the project and who also resided in the senior cohousing community) emailed posters about the study to residents and introduced the study to residents during their council meeting. In addition, the first author met with residents and discussed the research with them.

Data Collection and Analysis

Data collection took 6 months, from July 2017 through December 2017. We first collected quantitative data, which involved administering the WHOQOL-BREF survey. Next, we used results from the analysed quantitative data to inform the design of semi-structured questions for qualitative data collection. Accordingly, this process let us ensure the integration of data; that is, mixing of quantitative and qualitative data during data collection and analysis in order to understand participants' experiences in the research setting. Both phases of data collection took place in the research setting at a time convenient for both the participants and researchers.

Quantitative Data

We collected residents' demographic data including age, gender, level of education, marital status, self-rated health, self-rated quality of life, and self-reported co-morbidities to examine their effects on residents' QOL (Devriendt, Peersman, Florus, Verbeke, & Van de verde, 2016; Xiao et al., 2016). Participants self-administered the WHOQOL-BREF survey to assess their QOL. The WHOQOL-BREF consists of 26 questions covering the four domains of QOL: (a) physical functioning, (b) psychological state, (c) social relationships, and (d) environmental factors (Figure 1). Two additional questions assess individuals' overall quality of life and satisfaction with health (Kalfoss, 2016; WHOQOL-BREF, 1996).

The WHOQOL-BREF questions are rated on a 1 to 5 Likert scale with higher scores reflecting higher QOL (Kalfoss, 2016). The highest mean score achievable in each domain is 20. The reliability of the instrument is strong in most of the domains with a Cronbach alpha score of 0.82 for physical functioning, 0.81 for psychological state, 0.80 for environmental factors, and a moderate reliability of 0.68 for social interactions (Kalfoss, 2016). The collaborator and the lead researcher read through the survey and found the survey to be clear and at an appropriate language level for the participants. However, a follow-up discussion of the survey data during focus groups showed that participants did not understand a question on personal relationship in the social domain, and three participants did not answer the question on sexual activity in this domain, which contributed to the low findings in this domain.

We analysed the survey data using IBM SPSS 24 software by performing descriptive statistics of means, frequencies, and percentages on participants' demographic data and responses to the WHOQOL-BREF questions. We also calculated the mean of participants' perception of their QOL and the four QOL domains. Due to the low sample size, relationship and differences among variables could not be calculated.

Qualitative Data

We conducted five focus group sessions and two individual interviews that lasted 60 minutes each. One focus group had six individuals and the rest had two or three participants. The individual interviews were conducted to overcome a limitation of focus groups, namely the influence of some group members on other members' responses (Polit & Beck, 2018). We interviewed the resident collaborator on the project separately to prevent their presence from influencing the group's responses. We conducted one other individual interview with a resident who expressed discomfort in sharing their experience in the focus group. Seventeen participants who completed the quantitative survey took part in the focus group discussions and individual interviews. We audiotaped the focus groups and interviews. Of the 17 participants, 16 were original residents. Participants in the focus groups were homogeneous on demographic characteristics such as age. In addition, on the basis of the survey results, we found that the participants had similar values (e.g., political views) and perception regarding QOL. We designed

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the semi-structured questions to guide the focus groups and individual interviews such that the research team would understand the impact of cohousing on participants' QOL. The questions covered areas such as participants' previous accommodations, number of years lived in the building, perceptions about QOL, and experiences living in a seniors' cohousing community.

We used thematic analysis to analyse participants' stories from the focus groups and individual interviews. Thematic analysis is an approach for identifying, analysing, and reporting themes in data to provide rich, in-depth analysis that explains what is important to the participants in relation to the research question (Vaismoradi, Turunen, & Bondas, 2013). We particularly noted how participants agreed or disagreed on ideas in the focus groups during data analysis in order to gain an insight into participants' creation of knowledge on the topic in the focus group. The group agreement is illustrated in some of the quotes in the text where a participant will build on another participant's idea.

The qualitative data analysis process began with research assistants (RAs) transcribing audio-recordings from the focus groups and individual interviews. Open coding involved writing codes directly beside the text in the transcripts (Nasstrom, Luttik, Idvall, & Stromberg, 2016). We then generated a table of themes and subthemes for each of the seven transcripts during the initial and subsequent readings of each transcript. Next, we compared themes between and among all of the transcripts. We also conducted latent analysis which involved researchers' immersion in the data through frequent reading of transcripts in order to identify themes that represented what was important to the participants on the research topic (Vaismoradi et al., 2013).

During data collection and analysis, we asked participants about (and examined) the data set for a contrast question – "How is living in cohousing different from living in a condo or a nursing home?" – in order to discern the attributes and meaning of each of the themes (Agar, 1996). The first author and the RAs each analysed 3 of the 7 transcripts independently and then met to discuss their analysis. There was consensus in most of the findings; as a result, the first author completed the analysis of the four remaining transcripts and shared the analysis with the research team for discussion. Some observational data were documented in field notes; notes included interactions among residents and verbal and non-verbal communication during a social function and the focus groups. The first author compared field notes with a research assistant (RA) after each field trip. We used field notes that informed the data analysis by serving as reminders to us of the context in which we had collected the data.

Rigor

We enacted strategies for ensuring rigor in quantitative and qualitative approaches during the study. The reliability of the WHOQOL-BREF instrument is high for three of the four domains (Kalfoss, 2016). The first author facilitated the focus groups and one individual interview because of the researcher's experience in qualitative research. An RA took notes during the focus groups and interviewed one participant independently. We performed member checking through participants' review of the transcripts and confirmation that the themes reflected their experiences. The first author used reflexivity to consciously identify assumptions held to ensure they did not influence the collection, analysis, and interpretation of data as well as reporting of the findings (Cruz & Higginbottom, 2013; Higginbottom, Pillay, & Boadu, 2013).

Ethical Considerations

The institutional Research Ethics Board granted ethical approval for the study. The seniors' cohousing council gave the research team permission for access to participants for the study. Researchers provided written and verbal information about the study to participants. Participants gave written informed consent for the study. Participants in the focus groups agreed to maintain the confidentiality of the focus groups, though this could not be guaranteed by the researchers. The researchers conducted individual interviews and focus groups in private units or behind closed doors in order to ensure those participants' confidentiality. Pseudonyms are used in the report of the findings.

Quantitative Data

In total, 23 individuals took part in the WHOQOL-BREF survey. Six (26 %) were males and 17 (74%) were females between the ages of 55 and 85 years. The mean age was 70 years. The majority of the participants, 12 (52%), were married, 3 (13%) were divorced, 3 (13%) lived as common-law partners, 3 (13%) were widowed, and 1 (4%) was single. Most of the participants (18; 78%) had tertiary education, and 4 (17%) participants had completed high school (Table 1). All participants identified themselves as Caucasian with diversity seen in sexual orientation and religious background. QOL in the environmental domain had the highest mean of 17. QOL in the physical health and psychological domains was ranked second with a mean score of 16 in each domain. QOL in the social domain ranked the lowest with a mean of 15 (Table 2). There were two other questions: question one (Q1) asked about participants' perception of their

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Table 1: Demographic data of participants

Item	Frequency	Percentage (%)
Age		
55–64	4	17
65–74	11	48
75–84	6	26
85–94	1	4
Missing	1	4
Total	23	
Gender		
Male	6	26
Female	17	74
Total	23	
Highest level of education		
Tertiary	18	78
Secondary	4	17
Missing	1	4
Total	23	
Marital status		
Single	1	4
Married	12	52
Living as married people	3	13
Divorced	3	13
Widowed	3	13
Missing	1	4
Total	23	

quality of life, and question two (Q2) queried participants about satisfaction with their health. Participants' ratings on perception of QOL were high with a mean score of 4.56 out of 5; more female than male participants rated their QOL to be very good (Table 2). The majority of the participants selected satisfied or very satisfied on perception of their health with women more satisfied with their health than men.

Qualitative Data

Four broad themes emerged from the data analysis: (a) "belonging in a community", (b) "life in the community", (c) "changes associated with aging", and (d) "aging in place."

Table 2: Descriptive data on four domains in WHOQOL-BREF and perception of QOL

Item	Descriptive Statistics		
	n	*M*	*SD*
Domains of quality of life			
Physical health domain	23	16.25	2.81
Psychological domain	23	16.03	1.87
Social domain	23	15.16	1.82
Environment domain	23	17.17	1.81
Perception of quality of life			
Male	6	4.50	.55
Female	16	4.63	.50
Missing	1		

Theme 1: Belonging in a Community

The research setting is a seniors' cohousing building that occupants consider to be a small community. Participants indicated there was a sense of belonging in the community. The categories under this theme are "homogeneous group" and "knowing each other".

Homogeneous Group

The people in the community had similar backgrounds – such as previous homeowner status, shared political values, and being retired seniors – which they stated contributed to their feeling of belonging in the community. A female participant in her 80s said:

> People who are in co-housing are, on the whole, middle class people. They are not people with vast amounts of money or huge influence on all kinds of things. On the other hand, they are not people who are poor because we have to buy our own units here, so you have to have enough money in order to do that.

Other characteristics that the participants shared about their homogeneity were their similarity in ages and values. Participants indicated they were happy living with people of similar age group and political values. A female participant in her 70s said:

> I didn't expect our group to be so homogeneous, in terms of our political outlook. We are a non-conservative group … It can feel quite isolating in our area where we lived on a farm. Our farm [area] is very conservative.

The homogeneity of the group developed during their planning stage which took four years of meetings and led to self-selection of the group members.

Knowing Each Other

The idea of knowing each other was one of the main stated reasons as to why many of the people moved to the building. A female participant in her 60s said that "we knew we wanted to live in a situation somewhat similar to rural; the best of rural living is when you know all your neighbors." Knowing each other was said to lead to trust, security, and respect for each other. A male participant in his 50s commented:

> So, you know, I like that sense of community. You know, I would really give anybody my keys and say I am going on vacation, can you water the plants or whatever. And, I would give to one person but I would give it to anybody or give it to five people. You know, I really feel that sense of comfort and sense of trust.

The theme "belonging in a community" highlights the older adults' perception of what contributed to their QOL in their living environment, which included

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living with neighbors they shared common values with, knowing each other, trusting them, and feeling safe in the building.

Theme 2: Life in the Community

This domain represents the experiences of the participants living in the seniors' cohousing and how it impacted their quality of life, from their perspective. Notably, most participants had difficulty responding to the interview guide question "What is your view about quality of life?" There was consensus among participants in focus groups that QOL is an individual's satisfaction with life, as a female participant in her 60s expressed in this example:

> Quality of life for me is having a community that feels like a family; they are here and I know I can count on them. I have counted on them, you know they are always there and like [another participant] said, having quality of life is how much you are enjoying your life, how you view your life, how you feel about your life and the happiness that you are experiencing or not. And, my quality of life is much greater here than it was before.

The categories under this domain are (a) "autonomy", (b) "philosophy of the community", (c) "motivation and activity", (d) "social interaction", (e) "support in the community", and (f) "challenges living in the community".

Autonomy

Participants expressed that they were able to exercise their freedom in the residence, such as by having a choice on where to live, choosing when to move, attending programs, and maintaining privacy and making decisions, which all contributed to their quality of life. A male participant shared the following:

> Well, I am [in my 80s] now and we moved about 5 years ago. My wife and I were starting to experience our friends and relatives ending up being sick and having to move and not being able to choose where they move and we thought we should move. We liked this idea of [seniors' cohousing] and we thought it was important that we choose where we move.

Some participants demonstrated control over their movement by moving gradually and keeping two homes, which can be seen as a form of coping with the difficulty separating from material goods or memories. A male participant in his 70sobserved:

> I am so attached to that farm. It is bred in my bones! I once thought that we would be able to make a transition slowly. I would slowly become involved in things, in this urban place, and to some extent it has happened but I am resisting now. It is very interesting to be going back and forth. Tomorrow night I will be sitting in this house that I built with my own hands, in front of the fire and playing my music.

Philosophy of the Community

The cohousing building is a unique community which includes the bylaws that govern it. The community is governed by a council made up of all of the owners of units in the building that meet about 9 to 10 times in a year. Decisions are made based on consensus and fairness. A male participant in his 70s said:

> The philosophy of co-housing, though, I mean … one of the big differences in [a co-housing building] as compared with a condominium lifestyle is the way we organize our policies and make our decisions. We operate as much as possible on a consensus model. Every household in the place has a voice and a seat at our council. We don't have a board.

Individuals have a strong desire to make everyone happy in the community by trying to achieve consensus, which may lead to giving up control. Participants identified that not everyone would want to live in a cohousing community because of the compromises one has to make. A female participant in her 70s said, "I mean, it's not an option for everybody, probably for relatively a small proportion of the population, which is too bad. Having to think about somebody other than your own, your own immediate household." Part of the operation of the community includes a reserve fund created by the community. A female participant in her 60s shared:

> Every month each unit contributes $25 to the community fund as a membership fee as we have [done] from the very beginning … this is how we get money to pay for snacks, to pay for coffee and generate some money that can be used for the needs of the community, and it's proven to be very helpful.

In addition, there are small committees, such as social, food, garden, and housekeeping; and every member participates on at least one for the upkeep of the community.

Motivation and Activity

Participants shared that their QOL had either improved or been sustained because of the motivation and activity in the community. There are activities such as yoga class and programs, including a wine and weeding activity, that bring people together. A female participant in her 60s said:

> I have improved physically because I am doing a whole bunch of new stuff with a bunch of new people here. I think for me a lot of it is what I mentioned before about the inspiration from other

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> people here that have got me thinking about how do I want to go into old age. And I look at them and I think – okay, most of them are in good shape, both physically and mentally. Some people aren't in great shape physically, but they still do stuff as much as they can. I think, that for me, that's the most important thing that has helped me.

Activities were available in the building and could be adapted for various levels of ability and interests.

Social Interaction and Friendship

Opportunity for socialization was a factor that participants shared had contributed to their good or improved mental health and quality of life. A frequently used strategy to bring people together in the building was eating together during potlucks and common meals. A female participant in her 60s said that she and her husband were happy to move to the building because they realized it was a means of addressing loneliness in older adults.

> There [are] so many opportunities to do things with other people here … go for lunch, go to a movie … I need the company of mostly other women and my husband really needs to be able to be around men. So today for instance he is just headed off to [another town] with our elderly friend Fred to help him move furniture into his cabin up there. He couldn't do without James' help, and James is just happy to do it. So just the impact on our life here –. We have friends here. We are not isolated in a big 5 bedroom house …

Most men moved to the building as a strategic plan to secure a place for their spouse in case they pass on so that their spouses are not isolated. A female participant in her 60s shared her observation about the males in the community: "They were here because he thought that he would die first and so his wife then would have this community around her".

Support in the Community

It was noted that there was great support in the building, including emotional, physical, and financial support. A female participant in her 60s reported:

> We have actually been sort of taking care of each other. Just the first month we moved in, a woman on my floor who is still working was sick. She lives alone and she disappeared into her condo. And, 2 or 3 days after she disappeared in her condo, my husband and one of our retired nurses went to her door and banged on the door and got entry into her place and immediately took her to the hospital because she had really bad pneumonia. And, she was unaware of how sick she was. But again like it was the people in the community that said okay like we haven't seen her in 2 days, we got to check on her.

Because of the social interaction, support, and diverse activities in the community, participants discussed the fact that the community had contributed to their improved mental health and QOL. A female participant in her 60s said, "I think my mental health has improved; I think my physical health is – if it's improved at all, it's because we have exercise". Physical and mental health maintenance or improvement was attributed to the cohousing community.

Challenges in the Community

Although there were many benefits noted in the community, participants identified some challenges, particularly in how to communicate respectfully with different people. A female participant in her 60s commented that "you know, it's communication skills and how do we do those things … without assuming that what we think everybody ought to think so and still respecting each other. We are learning and it's not always easy." Participants shared different strategies to resolve the challenges related to conflict management in the community; in particular, participants proposed hiring an expert in conflict management to help address conflicts that they were unable to resolve.

Another common challenge participants shared was reducing their belongings from large houses that most of them lived in to fit into one- or two-bedroom units in the building. A male participant in his 70s expressed that it was difficult "to live where you don't have a lot of space to put stuff, and it was just harder. It's not a big deal now, but getting rid of my stuff and downsizing was really, really hard …".

The theme "life in the community" describes residents' perceptions of autonomy, the bylaws, activities, and programs that exist in the cohousing building that enhance older adults' independence, motivate and support them, as well as prevent social isolation which overall sustains or improves their QOL.

Theme 3: Changes Associated with Aging

Aging is connected with changes in the body and relationships. This theme is about two categories, "deterioration in health" and "experiences of loss" that older adults encounter later in life.

Deterioration in Health

Although most participants acknowledged that their physical health was deteriorating as a result of aging, participants described their quality of life to be good nonetheless. Some of the health conditions reported were cancer, arthritis, poor vision, and lapses in memory. A participant in her seventh decade said, "I have stage 4 metastatic breast cancer … I lived with stage 3 and stage 4 cancer for 14 years and I do not live

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with pain. I have lovely grandchildren and I love my life." Another participant in her ninth decade made this observation about the decrease in memory she was experiencing:

> I get a little nervous about the fact that I forget things these days. … I try to carry on a conversation, and then I cannot think of the name of the person I want to talk to. You know, then half an hour, the name is there, you know exactly who it is … I am quite conscious of the fact that I am not as sharp as I used to be. But, we kind of understand that about one another, and that's not so much of a problem, as you might have, if you are in a totally different group.

Experience of Loss

Besides the deterioration in health, older adults in the study reported crises in their lives in terms of having lost loved ones. A male participant in his seventh decade said, "On the mental side, [which] someone mentioned, my wife passed away about a year and half ago and that was quite a great thing to handle. It's not one of those things you can forget … In a lot of ways I kept quite busy." Participants agreed that the age of people in senior cohousing should be spread out in order that the community could be sustained: "[the community should have] just the – sort of – 50, 55 [age group] through to whatever the top end is, but don't have everybody touching 80 here; otherwise, you are going to have problems fairly quickly." There was consensus among the focus group members on the age for senior cohousing as expressed in this quote from a male participant in his 80s:

> I think I agree with [you] on this topic. Because 10 years goes by awful fast. You move in when you are young … but 10 years [later] … you are older. You start to lose it. I have a sense people are getting crankier instead of getting better.

Participants also discussed their interest in aging in place in the building despite the age-related changes they were experiencing.

Theme 4: Aging in Place

This theme represents participants' wish to continue to stay in the building as they aged because of its contribution to their quality of life. The categories that emerged under this theme are "access in the building and to community", "decrease worry about maintenance and finance", and "not living in a nursing home".

Access in the Building and to Larger Community

The building was designed to facilitate aging in place. As a person enters older adulthood, mobility becomes a challenge due to health issues such as arthritis. Study participants indicated that their ability to move easily within the building had contributed to their improved or sustained QOL. A male participant in his late 60s remarked:

> But each unit is contained on, you know, all the rooms; there is no stairs within a unit. So, that's the convenient factor if you are having mobility issues: you can move around to every part of your own unit. And the elevator takes you from main floor to your floor and so, that element is important. And actually, the doorways are a little wider than normal. So, they could accommodate wheelchairs if necessary. The light switches are low, very low, lower than normal, so you could reach them from a wheelchair.

Decreased Worry about Maintenance and Finance

Many of the participants explained that their QOL is good in the building because they did not have to worry about maintenance. A female participant in her 70s noted that "the quality of the building is good enough where you don't have to worry about doing maintenance; you don't have to worry about [the roof] falling down on you." For older adults, especially those who were retired, having no financial concern was perceived as enhancing their quality of life. A female participant in her 70s said that "the quality of life has to do with not having financial worries and not having emotional stress and tension."

Not Living in a Nursing Home

This category reflects two distinct views from the participants: (a) not wanting to go to a nursing home, and (b) not wanting the building to be turned into a nursing home. All participants indicated they would like to age in place, and many participants said that they did not want to be placed in a nursing home. From a male study participant in his 50s:

> I really and truly, you know, after watching, especially, my grandmother, but my father more so, in the nursing home. You know, that is the absolute last place in the world I would want to be. And I appreciate there was dementia and stuff that he had. You know, he stayed with my mom as long as he could or she could manage. And, that's all fair enough …

Similarly, participants indicated that they did not want the building to become a nursing home. A female study participant in her 80s said:

> We don't want our guest room to be used for living-in caregivers, we don't want this to become a locked facility in any way that means people with Alzheimer or dementia will begin to wander … we expect that they will be placed in a better facility than here. We are not going to turn into a nursing home.

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The theme "aging in place" summarizes older adults' preference to live in their homes in the cohousing building because of the easy access within the building and, moreover, they did not have to be burdened with building maintenance as well as worry about finances. Figure 2 categorizes the factors that participants in the study identified as contributing to older adults' QOL.

Merging Data in Mixed-Method Design

Merging both the quantitative and qualitative data from the study enhanced our understanding of the impact of senior cohousing on older adults' QOL (Table 3). The merged data can be described as explanatory, with the qualitative data expanding on the quantitative data (Creswell & Plano Clark, 2007). The four themes from the qualitative data describe the multifactorial influences on older adults' QOL and largely influenced the high ratings participants gave regarding perceived QOL in the survey, which enhanced our understanding of the quantitative data.

Discussion

This pilot study's findings represent the first research that has examined seniors' cohousing and its impact on seniors' QOL in Canada. Although participants had challenges in conceptualizing the meaning of QOL, they concurred that it is subjective, influenced by multiple factors, and involves an individual's perception of their satisfaction in life. The meaning of QOL and factors influencing it agree with WHOQOL's (1995) definition of QOL and the framework that guided the study. Factors that contributed to participants' QOL and their high rating of QOL from the survey in this study are captured in the four main themes that emerged from the qualitative data and which concur with past studies (Kalfoss, 2016; WHOQOL, 1995): (a) "belonging in a community", (b) "life in the community", (c) "changes associated with aging", and (d) "aging in place".

Belonging in a community describes participants' satisfaction with their QOL in the building. Older adults in this cohousing community have indicated that one of the reasons for choosing cohousing was because they wanted to be in a living arrangement where they felt that they belonged; they cared about each other; and they were engaged and felt safe. Similar findings have been reported in the literature (Bigonnesse, 2017; Bigonnesse & Chaudhury, 2016; Kang et al, 2012). Another area contributing to belonging in the community is living with other older adults in an environment that promotes open conversation and acceptance of the

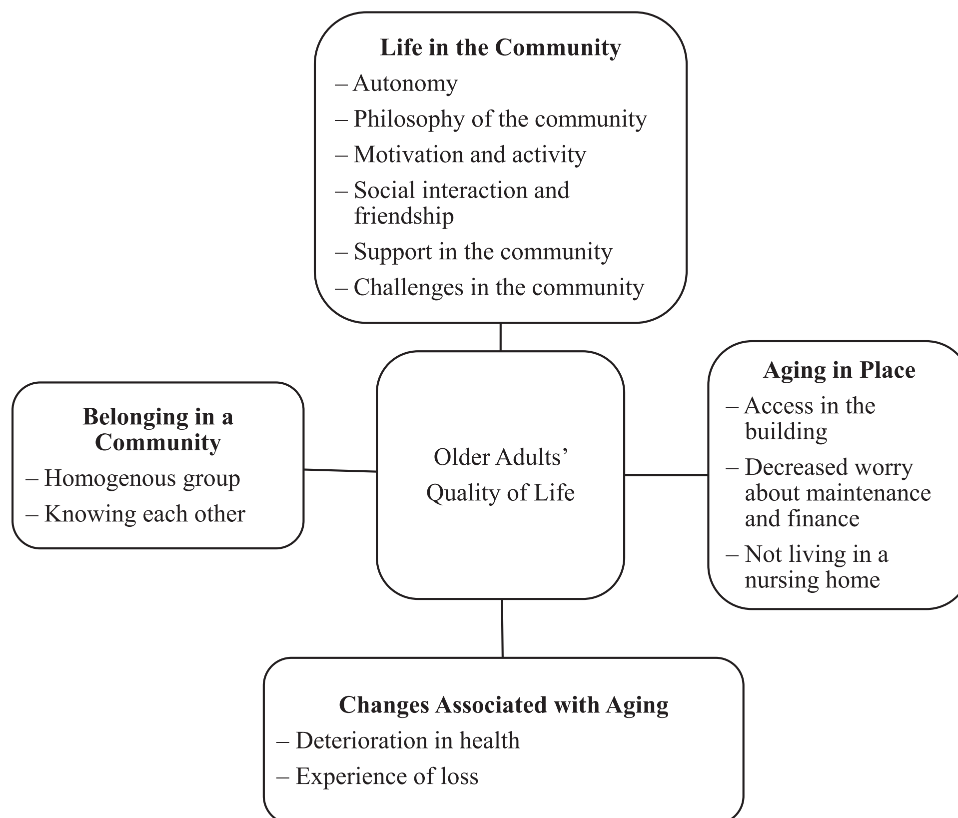

Figure 2: Framework on older adults' quality of life

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Table 3: Comparison of quantitative data with qualitative data and merging of both

Quantitative Data and Mean	Themes from Qualitative Data	Qualitative Data	Merged Findings
Environment *Mean* = 17	Aging in place	Mobility is enhanced in the building because the units have no stairs; other amenities such as elevator, sauna, and yoga in the building contribute to residents' quality of life. The building design promotes contact among people. The senior cohousing is accessible to the outside community.	Expand on quantitative data
	Belonging in a community	The seniors' cohousing is a small community where everyone knows each other and feels a sense of belonging.	
	Life in the community	Autonomy in choice of residential accommodations and decision making contribute to satisfaction with the cohousing environment.	
Physical health domain *Mean* = 16	Changes associated with aging	Participants are active and involved in many activities; therefore, they assessed their QOL in the physical health domain to be very good despite any decline in health.	Expand on quantitative data
Psychological domain *Mean* = 16	Life in the community	Participants noted that their mental health improved in the seniors' cohousing environment because of the opportunity for many friendships possible in the community.	Expand on quantitative data
	Aging in place	Participants observed that not having to worry about finances and emotional support has improved their mental health.	
Social relationships *Mean* = 15	Life in the community	Participants said that living in cohousing is better than being isolated in their previous homes because of the motivation and access to other neighbors to readily interact with in the building.	Clarified quantitative data

aging process and its changes: a strong coping mechanism for older adults which is supported in the literature (Glass & Vander Plaats, 2013). A unique finding from this study is that the participants were satisfied living with people with the same political view because of the freedom in speech and interaction it offered them.

Managing interpersonal communication emerged as a concern for congenial living in the community, despite the common values residents shared. Some of the reasons accounting for challenges in communication within the community could have been, as some study participants suggested, because residents were still learning about each other and experiencing changes related to aging. For example, Glass (2016) found that individuals living in resident-managed elder intentional neighborhoods (REINs) in their first year were more satisfied – because of the excitement that accompanied the first year's experiences – than those who had resided there longer. Glass explained that the challenge in interpersonal relationships could indicate that residents were not really as homogeneous as they claimed.

Other observations from our pilot study involved the financial and demographic characteristics of the residents. The residents could be considered essentially middle-class, healthy, and highly educated self-identified Caucasians who could afford living in the building. This observation implies that cohousing may be available particularly to people with high socioeconomic status and therefore could contribute to their high QOL. Residents' socioeconomic status and satisfaction with their QOL in the building concur with findings from Glass's (2016) study. The residents' feeling of belonging in the community resulted in the highest score on the environmental domain on the WHOQOL-BREF survey and concurs with past research that older adults' living environment influences their QOL, with older adults living in the community having more independence and higher quality of life than those in institutions (Bielderman, et al., 2015; Kadowski, Wister, & Chappell, 2015; Stones, Kozma, McNeil, & Worobetz, 2011; Turan, Yanardag, & Aras, 2012).

"Life in the community", the second theme derived from the qualitative data, describes factors in the seniors' cohousing environment including (a) autonomy, (b) community philosophy,, (c) activities and the motivation to participate in them, (d) social interaction, (e) support, and (f) challenges in the community that influence older adults' QOL such as respectful, congenial communication and the downsizing of personal belongings. A unique finding from this study is the fact that residents have to make compromises, such as giving up control over certain personal preferences (e.g., which type of flowers to be grown in a garden), in order that all residents might live harmoniously, which could make cohousing not suitable for everyone. Although residents enjoyed their independence in the building, they cooperated with each other and made compromises in order to live harmoniously with each other. The homogeneity of the community provided a sense of comfort although it did not eliminate the occurrence of conflict. Another finding from this study

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which, because it is unique to this cohousing community and thus not reported elsewhere in the literature, is establishing a reserve fund and community account, which relieves members of financial burden such as building maintenance. Financial sufficiency is a component of the environmental domain which contributed to the study participants' high rating in this domain.

Other factors contributing to residents' sustained or improved mental health and QOL included (a) involvement in activities (e.g., exercise, gardening) as a result of motivation from neighbors' involvement in same, and (b) increased social interaction. Both factors align with past research findings on cohousing and older adults' QOL (Critchlow, 2015; Glass &Vander Plaats, 2013; Kramp, 2012; The National Seniors Council, 2014). These research findings strongly support seniors' cohousing as an appropriate, innovative living arrangement for older adults that can reduce or prevent loneliness and its effects such as depression and suicide; moreover, cohousing can result in savings to the health care system from the costs otherwise associated with having to manage these health issues. All participants in the focus groups shared that their mental health had improved in the cohousing community setting examined in this research study.

A challenge identified in this study was the absence of conflict resolution strategies in the cohousing setting. The theme "life in the community" expands on the environmental, psychological, and social domains from the quantitative data. The psychological domain was rated second highest by study participants, similar to the physical domain from the survey.

Scores on the social domain from the survey were the lowest, which was surprising considering the participants' descriptions of their experiences in the research setting from the focus group data. Researchers' probing on the social domain during focus groups found that participants did not understand some of the questions on the survey while questions such as "satisfaction with sexual life" were not answered by some participants (n = 3), thereby lowering scores on the social domain. Participants thought the question on personal relationships was about their relationships with people outside the building. Participants shared that they did not have much interaction with friends outside the building because of the numerous activities in the cohousing environment; as a result, they ranked this particular question low. The WHOQOL-BREF instrument that we used in this study did not differentiate between neighbors from cohousing and friends from outside the building unlike in Glass's (2016) instrument for assessing social resources of residents in REINs. Findings from this current study highlight the need to make this distinction when studying social relationships in cohousing. Some studies have found low ratings on the social domain on the WHOQOL-BREF survey resulting from different reasons including (a) older adults living in long-term care facilities and (b) being cared for by nonfamily members (Kumar, Majumdar, & Pavithra, 2014; Onunkwor et al., 2016).

Changes associated with aging is the domain that summarizes the alteration in older adults' lives as a result of aging. Many of the older adults reported the presence of physical health issues; however, they nonetheless assessed their QOL to be very good because they were active and socially engaged in the community (Table 2). This finding aligns with the literature about the minimal influence of older adults' physical health on their perceived QOL (Onunkwor et al., 2016). Participants received and gave various forms of care such as sending a sick neighbor to hospital and preparing meals for a sick person, which are characteristics of cohousing that make it appealing to older adults who may not have their families around. This finding, support in cohousing, coincides with the benefits of cohousing reported in the literature (Bigonnesse & Chaudhury, 2016; Glass & Vander Plaats, 2013).

The theme "aging in place" highlights the multiple factors such as access in the building, decreased worry about maintenance, and not living in a nursing home, all of which influence older adults' QOL and support findings from other studies (Ewen, Hahn, Erickson, & Krout, 2014; Ewen et al., 2017; Jeffery et al., 2017; Teston & Marcon, 2014; Weeks et al., 2012; Wiles, Leibing, Guberman, Reeve, & Allen, 2012). Participants observed that not having to worry about finances was one of the factors that contributed to their QOL, which concurs with other reports in the literature (Kalfoss, 2016; Jeffery et al., 2017; WHOQOL-BREF, 1996). Another finding from our study is that participants do not want the senior cohousing to become a nursing home; neither do they want to live in a nursing home, because of older adults' anticipation of decreased autonomy and social contact in institutions. Our study's finding of older persons not wanting to live in a nursing home aligns with findings in the literature about the 21st century older adult's disapproval of long-term care facilities (Critchlow, 2015; Ewen et al., 2014; Kang, et al., 2012; Kramp, 2012; Weeks et al., 2012; Young et al., 2015). The theme "aging in place" expands on the environmental domains from the quantitative data.

Future Research Questions

The study findings reveal that conflict in a cohousing community can be stressful because it affects many people since the community is small and interconnected. Furthermore, participants in this pilot study

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did not want the seniors' cohousing building to be turned into a nursing home, which implies people may have to move from the building when or if they eventually needed more care. However, the older adults did not want to live in a nursing home. Some questions for future research include the following: How do residents work out conflicts in a cohousing community? What strategies could be put in place to address conflicts that may arise in a cohousing community? How does a cohousing community accommodate residents when they become less able to participate in community activities? These research questions could be addressed in longitudinal and follow-up studies of long-established cohousing communities.

Limitations

The limitations of the study include a small sample size, lack of clarity of some questions in the instrument, and self-administration of the survey. First, the small sample size made it difficult to conduct inferential statistical tests to examine the effect of seniors' cohousing on older adults' QOL. Future studies should consider recruiting from multiple cohousing sites to increase the sample size. The second limitation is the instrument itself. Although the WHOQOL-BREF has high validity, findings from this study show that the instrument may need to be adapted in the social domain on the concept "personal relationships" to accurately reflect the meaning of the concept in a cohousing community. Future research considering a similar instrument will need to adapt the survey to distinguish between friends in the cohousing community and those outside the cohousing community. The third limitation is participants' self-administration of the survey which led to misinterpretation of some questions. In the future, researchers should pilot-test the instrument with participants from the research setting who are not part of the research team to ensure clarity of the instrument. Research assistants could be trained to assist with survey data collection by answering participants' questions.

Conclusion

The increasing number of older adults in the population demands that researchers and policy makers examine living arrangements that would support older adults' QOL and promote their healthy aging. Seniors' cohousing is an innovative housing option that appeals to 21st century older adults because of its numerous benefits. The findings from this study align with research evidence on the meaning and factors contributing to older adults' QOL. Participants rated their QOL to be very good especially on environmental, psychological, and physical domains on the WHOQOL-BREF survey. QOL in the social domain was rated lower, which was surprising given the qualitative findings from the focus groups. Most participants observed that their quality of life had been maintained or improved when they moved into the seniors' cohousing facility. The research provides foundational knowledge and contributes to evidence that seniors' cohousing can enhance older adults' quality of life.

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