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# Influence des municipalités pour soutenir la santé, la participation sociale et l'équité en santé des canadiens âgés: Résultats de l'ÉLCV

Mélanie LEVASSEUR, erg., Ph.D.

Webinaire de l'Étude longitudinale canadienne sur le vieillissement (ÉLCV)  
Canadian Longitudinal Study on Aging (CLSA) Webinar

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Sherbrooke

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# Influence of municipalities to support the health, social participation & health equity of older Canadians: Findings from the CLSA

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# Research team and collaborators

## Principal investigator

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# Rationale

## Municipalities

- Important role in + health, social participation & health equity
- Best performing?
- How?



<https://municipalitiesintransition.org>

## Rationale (cont'd)

- COVID-19 → mental health (Brooks *et al.*, 2020; Vigo *et al.*, 2020)
- Older Canadians → depressive symptoms (Raina *et al.*, 2021)
- Importance of age-friendly communities in enabling support, communication & trust
- Protective effect in depressive symptoms ?





## Positive health

what creates health & strengthens the effectiveness of clinical & population interventions (Roy *et al.*, 2015)

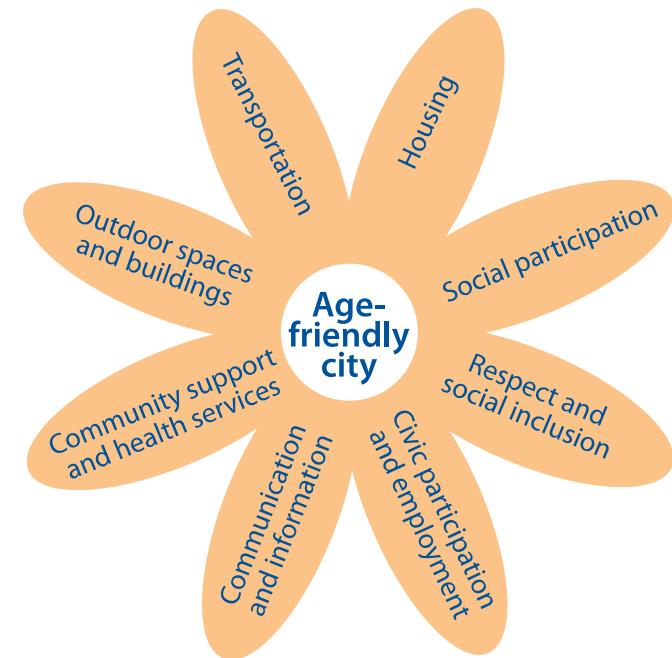
## Social participation

Involvement of the individual in activities that provide interaction with others in the community (Levasseur *et al.*, 2010; 2022)

## Health equity

Absence of unfair systems and policies that result in inequities (Public health agency of Canada, 2011)

# Age-friendly city topic domains & level of implementation



- 1) established an advisory committee
- 2) secured a local municipal council resolution towards becoming age-friendly
- 3) established a plan of action
- 4) publicly posted the action plan
- 5) committed to measuring activities, reviewing action plan outcomes & reporting on them publicly

(Public Health Agency of Canada, 2016)

# Preliminary work

- ¼ would like to participate more
- Inequalities by gender & context
- Proximity to resources, social support, transportation & neighborhood safety
- Frequency of social participation metropolitan = urban = rural
- Driver's license & proximity to resources
- Metropolitan: public transit & network quality
- Rural: children living in the neighborhood & living there  $\geq 20$  years

## Preliminary work (cont'd)

- ↑ friendliness → metropolitan, > # of seniors, < material deprivation & superior AFC milestone
- Nature, a variety of activities, effective communication & equity measures → influence + health + social participation & equity
- ↑ sense of community belonging → resilience influence social participation more
- < resources → ↓ social participation, no matter the ability ♂, however ↑ when > resources & ability ♀

# Objectives

## Part 1



Identify five Canadian municipalities where the aging population ranked highest on positive health, social participation & health equity



Compare the characteristics of their environment



Explore how Canadian municipalities foster positive health, social participation & health equity



Explore protective effects of AFC & other predictors on depressive symptoms in older adults during pandemic

## Methods - Secondary analyses of cross-sectional data

- Canadian Longitudinal Study on Aging (CLSA, 2011-15)
  - 41,400 respondents aged 45-85 living in 170 municipalities
  - Composite index of 3 components : positive health (4 variables), social participation (2) & health equity (6)
- 2016 Census (e.g., material & social deprivation)
- 2022 update of the 2016-7 online survey on municipalities' age-friendliness (56 key components; Menec *et al.*, 2015; St-Pierre *et al.*, 2022)



## More information



Levasseur et al. *BMC Public Health* (2017) 17:502  
DOI 10.1186/s12889-017-4392-7

BMC Public Health

STUDY PROTOCOL

Open Access



CrossMark

### Capturing how age-friendly communities foster positive health, social participation and health equity: a study protocol of key components and processes that promote population health in aging Canadians

Mélanie Levasseur<sup>1,3\*</sup>, Marie-France Dubois<sup>2,3</sup>, Mélissa Généreux<sup>2,3</sup>, Verena Menec<sup>4</sup>, Parminder Raina<sup>5</sup>, Mathieu Roy<sup>6,7</sup>, Catherine Gabaude<sup>8</sup>, Yves Couturier<sup>3,9</sup> and Catherine St-Pierre<sup>2,3</sup>

## Results of the municipalities' survey

- Municipalities' age-friendliness was good, especially for Security; Respect and social inclusion; Outdoor spaces and building; and Social participation
- ↑ age-friendliness → metropolitan, regions other than Prairies and Atlantic, ↑ residential density, ↑ older adults, ↑ social deprivation, ↓ material deprivation & AFC last step

Canadian Journal of Public Health  
<https://doi.org/10.17269/s41997-022-00617-9>

RECHERCHE QUANTITATIVE



Convivialité des municipalités canadiennes à l'égard des aînés :  
portrait et facteurs associés

Catherine St-Pierre<sup>1</sup> • Louis Braverman<sup>1</sup> • Marie-France Dubois<sup>1</sup> • Mélanie Levasseur<sup>1</sup>

# Part 1

Webinaire de l'ÉLCV

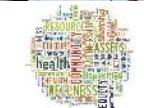
Where the aging population ranked highest on the average positive health, social participation and health equity? Top 5 Canadian municipalities



# Top 5 Canadian municipalities



	Oak Bay (BC) 218	Sainte-Julie (Qc) 33	Waterloo (On) 46	Saint-Lambert (Qc) 58	Saint-Bruno-de-Montarville (Qc) 43	Other municipalities 41 002
	Mean (s.e.)	Mean (s.e.)	Mean (s.e.)	Mean (s.e.)	Mean (s.e.)	Mean (s.e.)
Positive health	<b>57.5 (0.8)</b>	<b>57.7 (1.6)</b>	<b>57.4 (2.0)</b>	<b>56.8 (1.3)</b>	<b>55.3 (1.4)</b>	<b>53.9 (0.1) *</b>
Social participation	<b>33.0 (1.2)</b>	<b>28.0 (2.6)</b>	<b>32.5 (2.5)</b>	<b>27.8 (2.3)</b>	<b>27.3 (2.2)</b>	<b>25.9 (0.1) *</b>
Health equity	<b>82.3 (0.8)</b>	<b>82.5 (2.1)</b>	<b>81.3 (2.3)</b>	<b>81.9 (1.6)</b>	<b>82.6 (1.6)</b>	<b>75.0 (0.1) *</b>
Total (%)	<b>57.2 (0.6)</b>	<b>55.8 (1.2)</b>	<b>55.6 (1.8)</b>	<b>55.4 (1.2)</b>	<b>55.1 (1.2)</b>	<b>50.9 (0.1) *</b>



# Respondents in top 5 Canadian municipalities



	Oak Bay (BC) 218	Sainte-Julie (Qc) 33	Waterloo (On) 46	Saint-Lambert (Qc) 58	Saint-Bruno-de- Montarville (Qc) 43	Other municipalities 41 002
Age (yrs)	<b>60.5</b> (0.7)	<b>56.5</b> (1.5)	<b>58.3</b> (1.5)	<b>62.6</b> (1.7)	<b>57.2</b> (1.6)	<b>59.8</b> (0.1)
# chronic conditions	<b>3.1</b> (0.2)	<b>2.2</b> (0.4)	<b>2.6</b> (0.3)	<b>2.8</b> (0.3)	<b>2.5</b> (0.5)	<b>3.4</b> (0.01) **
Living in the community (yrs)	<b>26.6</b> (1.1)	<b>20.6</b> (2.6)	<b>29.0</b> (2.6)	<b>24.4</b> (2.1)	<b>20.2</b> (1.7)	<b>29.5</b> (0.1) *
Live with a partner (%)	166 ( <b>84.4</b> )	25 ( <b>79.3</b> )	37 ( <b>86.6</b> )	30 ( <b>58.9</b> )	30 ( <b>76.4</b> )	27 767 ( <b>74.2</b> ) **
Had a driver's license (%)	206 ( <b>99.3</b> )	31 ( <b>98.3</b> )	41 ( <b>99.2</b> )	49 ( <b>87.8</b> )	41 ( <b>96.7</b> )	36 030 ( <b>94.6</b> ) **

# Top 5 Canadian municipalities



	Oak Bay (BC)	Sainte- Julie (Qc) α	Waterloo (On) α	Saint- Lambert (Qc)	Saint-Bruno-de- Montarville (Qc) α	Other municipalities 164
Material deprivation ( /5)	1.2	1.7	2.1	1.0	1.1	2.7 (0.7) **
Social deprivation ( /5)	2.5	2.3	2.8	3.2	2.3	2.9 (0.6) **
Intersection density (km <sup>2</sup> )	79.7	47.3	87.3	63.1	48.3	40.9 (25.1) *
Population aged 85+ (%)	6.2	1.4	2.2	5.7	2.0	2.4 (1.2)
Age-friendliness ( /56; n = 116)	34	48	42	33	47	39.8 (0.03)

\*p < 0.05; \*\* < 0.001; α : age-friendly last milestone

## Top 5 Canadian municipalities



Perceived environment more favorably

- - afraid of walking at night ( $p<0.001$ )
- vandalism is not a problem ( $p<0.001$ )
- + included in their community ( $p<0.001$ )

## Method – Case study

McNeil-Gauthier et al., 2022



2 Quebec municipalities



5 semi-structured group  
interviews



24 participants

Older adults ( $n = 9$ )

Professionals ( $n = 4$ )

Community-based actors ( $n = 3$ )

Municipal employees ( $n = 5$ )

Elected officials ( $n = 3$ )



# Participant characteristics ( $n=24$ )

	Older adults ( $n = 9$ )	Others ( $n = 15$ )
Age [yrs; median (interquartile range)]	71.0 (9.0)	
Gender (woman)	7 (77.8)	12 (80)
≥15 yrs of residence in the municipality	7 (77.8)	
Living with spouse	6 (66.7)	
Education (graduate or postgraduate)	5 (55.6)	3 (20)
Retired	9 (100)	
Satisfied with their social participation	8 (88.8)	
Work in public sector		7 (46.7)
Tasks related to older adults		15 (100)

## Preliminary results

- Good policies, governance, sociocultural & socioeconomic contexts → ↑ positive health & social participation
- Importance of built environment, social, health & community services, and political and organizational contexts
  - **Proximity** [social network (Berkman et al., 2000) & social connectivity (Menec, 2017) theories]
  - **Transversality** [ecological models of aging and human development (e.g., Bronfenbrenner, 1994; Lawton, 1982)]

McNeil-Gauthier *et al.*, 2022

## Preliminary results

- Good politics contexts → ↑
  - Importance of a community service contexts
    - Proximity [social network (Berkman et al., 2000) & social connectivity (Menec, 2017) theories]
    - Transversality [ecological models of aging and human development (e.g., Bronfenbrenner, 1994; Lawton, 1982)]
- “An individual support is essential to create this relationship of trust [...] once you have created the bond of trust, you bring them towards health organizations.” (FGB2)*
- socioeconomic  
on  
&  
organizational

McNeil-Gauthier *et al.*, 2022

## Preliminary results

- Good politics, government contexts → ↑ participation
  - Importance of community settings contexts
    - Proximity [social network (Bengtson, 2017) theories]
    - Transversality [ecological models of aging and human development (e.g., Bronfenbrenner, 1994; Lawton, 1982)]
- "In all of our activities, there is always an adapted component so that the older adults have as much fun as the families. It is really natural, from the whole family's perspective. It is rewarding for older adults to participate in these events" (FGB2)*

McNeil-Gauthier *et al.*, 2022

# Objectives



Identify five Canadian municipalities where the aging population ranked highest on positive health, social participation & health equity



Compare the characteristics of their environment



Explore how Canadian municipalities foster positive health, social participation & health equity



Explore protective effects of AFC & other predictors on depressive symptoms in older adults during pandemic

# Methods - Secondary analyses of cross-sectional data



- Canadian longitudinal study on aging (CLSA, 1<sup>st</sup> follow-up 2015-8) & CLSA COVID-19 Questionnaire study (2020)
  - 6,659 respondents in 50 municipalities
  - Depressive symptoms (CES-D-10; /30)
  - 2016 Census (e.g., material & social deprivation)
- Survey on municipalities' age-friendliness (56 key components; Menec *et al.*, 2015; St-Pierre *et al.*, 2022)
- Latent class growth & hierarchical multinomial logistic

# Characteristics of the participants ( $n=6,659$ )

Level-1 ( $n_{\text{respondents}}$ )	AFC<5 ( $n=1,318$ )	AFC=5 ( $n=5,341$ )	$p$ -value
Age (yrs)	72.9+/-0.2*	72.9+/-0.1	0.94
Social participation	23.9+/-0.4	22.3+/-0.2	< 0.001
Gender (woman)	691 (52.4)**	2725 (51.0)	0.19
Income (50,000 – 100,000\$)	584 (44.3)	2298 (43.0)	0.78
Chronic conditions ( $\geq 2$ )	435 (33.0)	1818 (34.0)	0.69
Loneliness	470 (35.7)	1991 (37.3)	0.15
Weak sense of belonging	199 (15.1)	1252 (23.4)	< 0.001
COVID-19 infection	127 (9.6)	896 (16.8)	< 0.001

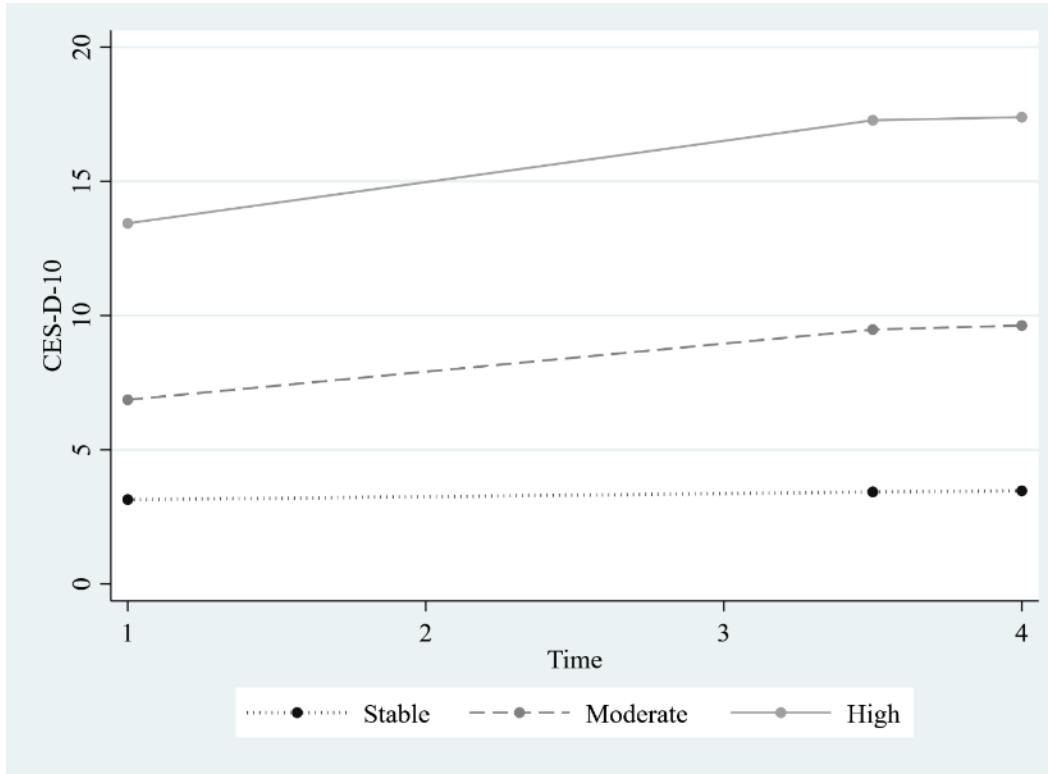
AFC = Age-friendly communities; \* mean+/-standard error; \*\*  $n$  (%)

# Characteristics of the participants ( $n=6,659$ ) or municipalities ( $n=50$ )

Level-1 ( $n_{\text{respondents}}$ )	AFC<5 ( $n=1,318$ )	AFC=5 ( $n=5,341$ )	<i>p</i> -value
<b>Pandemic related stressors (yes)</b>			
Separation from family	978 (74.2)**	3951 (74.0)	0.89
Difficulties accessing resources	625 (47.4)	2448 (45.8)	0.31
Health stressors	266 (20.2)	1149 (21.5)	0.31
Increased verbal or physical conflict	67 (5.1)	329 (6.2)	0.15
Caregiving responsibilities	236 (17.9)	928 (17.4)	0.29
<b>Level-2 (<math>n_{\text{municipalities}}</math>)</b>	<b>AFC&lt;5 (<math>n=26</math>)</b>	<b>AFC=5 (<math>n=24</math>)</b>	<b><i>p</i>-value</b>
Material deprivation	2.3+/-0.1*	2.5+/-0.1	0.21
Social deprivation	3.0+/-0.1*	3.0+/-0.1	0.91

AFC = Age-friendly communities; \* mean+/-standard deviation; \*\* n (%)

# Depressive symptom trajectories over time



# Predictors of depressive symptoms trajectories ( $n_r=6,659$ ; $n_m=50$ )

Level-1 ( $n_{\text{respondents}}$ )	Moderate	High
Age (ref.: $\geq 75$ yrs)	1.31 (1.16,1.49)*	1.06 (0.83,1.36)
Social participation	0.99 (0.99,1.00)	0.97 (0.96,0.98)
Gender (ref.: man)	1.99 (1.76,2.25)	2.58 (2.01,3.32)
Income < 20,000\$ (ref.: $\geq 150,000$$ )	1.29 (0.90,1.87)	2.92 (1.50,5.67)
Chronic conditions $\geq 3$ (ref.: none)	1.59 (1.32,1.91)	2.59 (1.83,3.66)
Loneliness (ref.: not lonely)	2.86 (2.53,3.22)	7.47 (5.75,9.72)
Strong sense of belonging (ref.: weak)	0.73 (0.63,0.84)	0.46 (0.36,0.60)
COVID infection (ref.: no)	1.27 (1.08,1.48)	1.57 (1.18,2.08)

\* Odds ratios (95% Confidence intervals)

# Predictors of depressive symptoms trajectories ( $n_r=6,659$ ; $n_m=50$ )

Level-1 ( $n_{\text{respondents}}$ )	Moderate	High
<b>Pandemic related stressors (yes)</b>	<b>Odds ratios (95% Confidence intervals)</b>	
Separation from family	1.29 (1.13,1.49)	1.42 (1.09,1.85)
Difficulties with accessing resources	1.73 (1.53,1.95)	2.10 (1.67,2.66)
Health stressor	1.36 (1.18,1.57)	1.70 (1.31,2.19)
Increased verbal or physical conflict	2.82 (2.21,3.58)	6.37 (4.49,9.04)
Caregiving responsibilities	1.22 (1.04,1.43)	1.96 (1.48,2.58)
<b>Level-2 (<math>n_m</math>) Material deprivation</b>	0.83 (0.73,0.95)	0.86 (0.64,1.15)
<b>Random effect</b>	<b>Standard deviation (<math>p</math>-value)</b>	
Intercept	0.09 (0.22)	0.30 ( <u>0.02</u> )



# Discussion

- Respondents from top municipalities differ
- AFC = no effect but municipalities = big areas
- Importance of material affluence in top & for depressive symptoms
- For top municipalities, influence of
  - social affluence, accessibility
  - feeling safe & included
  - being involved and heard, + collaboration

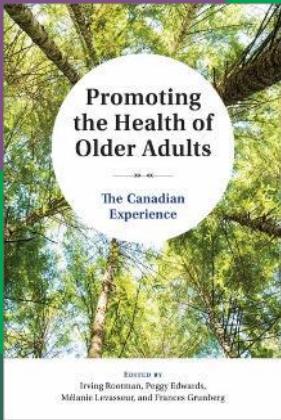


# Discussion (cont'd)

- For depressive symptoms, importance of
  - loneliness, sense of belonging & social participation
  - pandemic stressors → ↓ volunteers ?
- Limitations
  - + health, social participation, health equity & key components → small variation
  - Early pandemic (April & December 2020)
  - Age-friendly milestones ≠ age-friendliness

# Conclusion

- Influence of municipalities to foster active aging?
- Further research on key components
  - best fostering + health, social participation & health equity, and their underlying mechanisms
  - protective effect of AFC on depressive symptoms
- Importance of CLSA, including longitudinal data and use of health services in future works



*Merci/Thanks!*



# Questions? Comments?

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## Studying in Sherbrooke ?

**Scholarships:** M.Sc. (\$15,000/yr for 2 yrs), Ph.D. (\$19,000/yr for 3 yrs),  
Post-doc (\$30,000 for 1 yr)

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