HEALTHY AGING AND SOCIAL CONNECTIONS: WHY SHOULD WE CARE?

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“Population aging is unquestionably the most important demographic force of the first half of the twenty-first century”.

(Schoeni FR, Ofstedal MB. “Key Themes in research on the Demography aging” Demography, 47, 2010: S5-S15)
The world population is rapidly growing:

Source: U.S. Census Bureau, International Data Base, June 2010 Update.
World population is especially growing older:

- The share of the population aged 65+ is expected to double between 2010 and 2040, from 7.8% to 14.7%.

- The number of older people will increase from 530 million in 2010, to 1.3 billion by 2040.

(U.S. Census Bureau, International Data Base)
Another aspect of world population aging is the aging of the older population; the share of the older at ages 80+ (the “oldest-old”) is growing more rapidly than the older population itself.

This growth will translate into a large increase of oldest-old within the world’s older population, from 16% in 2000 to 24% in 2040.

(U.S. Census Bureau, International Data Base)
Gender and Aging

• NUMBERS
• MORBIDITY
• POVERTY
Historical increases of life expectancy

Phase 1
early urban

Phase 2
sanitation-nutrition

Phase 3?
regeneration
Obesity

Life expectancy in years

1550 1600 1650 1700 1750 1800 1850 1900 1950 2000 2050

England
Norway
New Zealand
Iceland
Netherlands
Sweden
Japan
## Population Totals in Canada by Age Group and Year

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<th>BOTH SEXES</th>
<th>FEMALES</th>
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1991 TOTALS: 13938100 | 28117600 | 14179500
Canada shows its age as seniors outnumber children for first time

ERIC ANDREW-gee
The Globe and Mail
Published Tuesday, Sep. 29, 2015 9:50PM EDT
Last updated Wednesday, Sep. 30, 2015 8:07AM EDT
Percentage of one-person households in Canada, 1951 to 2016

THE GLOBE AND MAIL, SOURCE: STATISTICS CANADA, 2016 CENSUS
Percentage of people who live alone by census district, 2016

42 of the top 50 places where people live alone are in Quebec.

Sparsely populated National average

25.8% 29.0% 32.2%

THE GLOBE AND MAIL, SOURCE: STATSCAN
Isolation & Loneliness

- The terms ‘isolation’ and loneliness are often used interchangeably, but they refer to two distinct concepts.

- Isolation
  - Separation from social or familial contact, community involvement or access to services

- Loneliness
  - An individual’s personal, subjective sense of lacking these things to the extent that they are wanted or needed
Risk Factors for Loneliness

• Personal
  • Poor health
  • Sensory loss
  • Loss of mobility
  • Lower income
  • Bereavement
  • Retirement
  • Becoming a carer
  • Other changes
    (E.g. giving up driving)

• Wider society
  • Lack of public transport
  • Physical environment
    (E.g. no public toilets or benches)
  • Housing
  • Fear of crime
  • High population turnover
  • Demographics
  • Technological changes
The Impact of Loneliness

“Individuals who are socially isolated are between two and five times more likely than those who have strong social ties to die prematurely.”

The Impact of Loneliness - biological

- People are less likely to engage in safe behaviours if isolated
- Loneliness makes it harder for people to regulate risky behaviours
  - E.g. Smoking, drinking, over eating
- Loneliness also creates changes in the brain which can exacerbate or precipitate ill-health.
- Loneliness can result in physical changes that increase risk of heart disease, high blood pressure and stroke
The Impact of Loneliness - mental health

• Depression affects 1 in 5 older people living in the community and 2 in 5 in care homes

• Lonely individuals are more prone to depression
  • This has been show to be causal
  • The more lonely someone is the more likely they are to experience depressive symptoms

• Loneliness affects cognition
  • Lonely people become more vigilant for threats and focussed on self-preservation
  • They can become less attentive to others’ feelings
  • They exaggerate negative and positive interactions
  • All this can impact relationships
The Impact of Loneliness - mortality

• A meta-analysis of 148 studies of social relationships and mortality
  • 50% increase in survival for those with strong social connections after an average of 7½ years.
  • Having weak social connections carries a health risk:
    • Equivalent to smoking 15 cigarettes a day
    • Equivalent to being an alcoholic
    • More harmful than not exercising
    • Twice as harmful as obesity
  • These correlations are likely to be greater for social connections if the positive effects of relationships were isolated.
Canadian Longitudinal Study on Aging (CLSA)
What is CLSA?

50,000 women and men aged 45 - 85 at baseline

Target: 20,000
Randomly selected within provinces

Target: 30,000
Randomly selected within 25-50 km of 11 sites

Tracking Cohort

Comprehensive Cohort

Questionnaire
• By telephone (CATI)

Questionnaire
• In person, in home (CAPI)

Clinical/physical tests
Blood, urine
• at Data Collection Site

2010 - 2015
2015
2018

Participants aged 45 to 85 at baseline (51,338)

Active follow-up every 3 years

Data Linkage

TIME

20 Years
CLSA Coverage

Telephone Interviews  
η=20,000

In home Interviews  
Data Collection Site  
Visits η=30,000
Depth and Breadth of CLSA at Baseline

**PHYSICAL & COGNITIVE MEASUREMENTS**
- Height & weight
- Waist and hip measurements
- Blood Pressure
- Grip strength, timed up-and-go, chair raise, 4-m walk
  - Standing balance
- Vision (retinal imaging, Tonometer & visual acuity)
- Hearing (audiometer)
- Sleep
- Spirometry
- Body composition (DEXA)
- Bone density (DEXA)
- Aortic calcification (DEXA)
- ECG
- Carotid Plaque sweep (ultrasound)
- Carotid intima-media thickness (ultrasound)
- Cognitive assessment

**HEALTH INFORMATION**
- Chronic disease symptoms (disease algorithm)
- Medication and supplements intake
- Women’s health
- Self-reported health service use
- Oral health
- Preventative health

**PSYCHOSOCIAL**
- Social participation and Social Isolation
- Social networks and support
- Life satisfaction
- Loneliness
- Caregiving and care receiving
- **Mood, psychological distress**
- PTSD
- Coping, adaptation
- Injuries and consumer products
- Work-to-retirement transitions
- Retirement planning
- Social inequalities
- Mobility-lifespace
- Air Pollution & Built environments
- Income, Wealth and Assets

**LIFESTYLE & SOCIODEMOGRAPHIC**
- Smoking
- Alcohol consumption
- Physical activity (PASE)
- Nutrition (nutritional risk and food frequency)
- Birth location
- Ethnicity/race/gender
- Marital status
- Education
CLSA Data  (30,097 participants)

Physical Assessments:
- Height, Weight, BMI
- Bone Density, Body Composition, Aortic Calcification
- Blood Pressure
- ECG
- Carotid Intimal-Medial Thickness
- Pulmonary Function (Spirometry)
- Vision & Hearing including (Retinal Scan)
- Performance testing

Cognitive Assessments:
- Neuropsychological Battery
  - Memory
  - Executive function
  - Reaction time

Biospecimen Collection:
- Blood
- Urine
Canadian Longitudinal Study on Aging (CLSA)

Key Findings from Baseline Data
2012-2015
Characteristics of CLSA Participants across Canada

- **Marital Status**
  - Most participants were married (68.7%)

- **Living Arrangement**
  - Participants: 75% Urban, 25% Rural
  - Younger participants have fewer children (aged 45-54 have 2±1.3 children, aged 75+ have 3±1.9)
  - 28.6% of participants live in a multi-generational household
  - 81.3% live in a single-family dwelling (17.2% apartment, <1% seniors’ housing)
    - More common for men (74%) than women (60.2%) to live in a house
  - 85% own their home
    - Only sex-difference is in oldest age group (84% of men vs 73% of women)
Income

Most participants (33%) earn 50-100K (middle-income)

Men tended to earn more

Oldest women most commonly low-income (12% <20K)

Younger participants have a lower disparity in income between sexes

Alberta had most high-income participants (23% >150K)
Loneliness and Social Isolation

- Loneliness (at least some of the time) most common in those living alone
- The percentage of individuals reporting being lonely at least some of the time is higher among women of all ages than for men
- Loneliness more common among widowed/divorced/separated, more of whom are women (particularly in older age groups)
- Married women more often report loneliness than married men
- Single women less often report loneliness than single men
Loneliness and Social Isolation

- The desire for more social participation is highest among unmarried groups, and younger age groups (45-64)
- Happiness and satisfaction with life were lower in those who reported loneliness at least some of the time
- Loneliness is strongly associated with the CES-D depression screen
  - 50% of women aged 45-64 who reported loneliness screened positive
  - 9% of women of the same age screened positive who reported loneliness rarely or never
Complexity of Social Isolation
Hearing loss increases many health risks

- Health states associated with hearing loss in cross sectional or longitudinal observational studies:
  - Mortality
  - Dementia
  - Cognitive decline
  - Depression
  - Falls
  - Injuries
  - Frailty
  - Social isolation

Risk factors for dementia: A life course model
Numbers indicate population attributable fractions

Dementia prevention, intervention, and care

Potential modifiable: 35%
Potential non-modifiable: 65%

Mid-life risk factors
- Hearing loss: 9%
- Hypertension: 2%
- Obesity: 2%

Late-life risk factors
- Smoking: 5%
- Depression: 4%
- Physical inactivity: 3%
- Social isolation: 2%
- Diabetes: 2%

Potentially modifiable: 35%
Potentially non-modifiable: 65%

The Lancet Commissions
July 20, 2017
Subjective sensory loss

• Hearing
  - “Is your hearing, using a hearing aid if you have one...”
    • Excellent, very good, good; VERSUS
    • Fair, poor/non-existent or deaf

• Vision
  - “Is your eyesight, using corrective lenses if you have them...”
    • Excellent, very good, good; VERSUS
    • Fair, poor/non-existent or blind
Outcomes

- Social network diversity
- Social participation
- Availability of social support
- Loneliness
## Sensory Loss and Social Factors

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<th>Dual loss</th>
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<td>X (age 65-85)</td>
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<tr>
<td>Low social participation</td>
<td></td>
<td>X</td>
<td>X (age 65-85)</td>
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<td>Low availability of social support</td>
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<tr>
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</tbody>
</table>
Combat loneliness and depression by sharing memories: Relive those glory days!

One of the pleasures in life is spending time with family and friends. Another is getting together to relive those good times and memorable moments. New research shows that group activities involving reminiscing can help relieve loneliness and depression.
Thank You