Dementia through a lens of Social Vulnerability

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Overview

• The continuum of dementia care and research
• What is social vulnerability?
• Social vulnerability in relation to cognition & health
• Another look at risk factors for dementia
• Clinical issues in dementia: the importance of social factors
• Conclusions
Traditionally, we speak of “bench to bedside” research. Clinical care has both biomedical and social elements.
Health

**Intrinsic** factors: frailty, comorbidity, genetics

**Extrinsic** factors: social and physical environment
Social factors and health

• Numerous social factors individually associated with health
  – Socioeconomic status
  – Social inequalities
    • income, social status, control over life situation
  – Social support
  – Social networks
  – Social engagement
  – Social capital (individual vs. group)
  – Social cohesion

• Can these be conceptually unified?
Ecological model of social vulnerability

Andrew and Keefe, *Ms submitted* 2012
Social factors and older adults’ health: the evidence

**Survival:** rich social networks, social supports, group engagement, occupational status (gradient), social capital, trust

**Cognitive decline and dementia:** social supports, social connectedness, loneliness, social engagement, social vulnerability, SES (individual and neighbourhood-level)

**Self-assessed health:** social capital, trust, social supports, volunteerism, group participation, SES (individual and neighbourhood)

**Mental health:** neighbourhood social capital, social ties, social networks, social supports, SES

**Mobility and falls:** SES, living alone, social engagement, neighbourhood deprivation/SES

**Functional decline/dependence:** low social engagement, social networks, social support, trust

**Institutionalization:** lack of social supports, social capital

**Frailty:** social vulnerability, SES, isolation, social supports

Social factors and older adults’ health: Mechanisms?

**Biological & physiological:**
- chronic stress
- hormones
- immune function

**Behavioural:**
- health behaviours - opportunities and norms

**Psychological:**
- self-efficacy
- coping strategies
- confidence

**Material:**
- access to goods & services
- financial resources (what you have)
- social status (who you are)
- social contacts (who you know)

**Neurophysiology:**
what can we learn from people with brain disorders about how the brain influences social factors (e.g. social engagement, social ties, trust in others)?

### Social vulnerability index: CSHA

**Leisure activities**
19. How often visit friend or relatives
20. How often work in garden
21. How often golf or play other sports
22. How often go for a walk
23. How often go to clubs, church, community centre
24. How often play cards or other games

**Ryff scales**
25. Feel empowered, in control of life situation
26. Maintaining close relationships is difficult and frustrating
27. Experience of warm and trusting relationships
28. People would describe me as a giving person

**How do you feel about your life in terms of ...**

**Family relationships**

**Friendships**

**Housing**

**Finances**

**Neighbourhood**

**Activities**

**Religion**

**Transportation**

**Life generally**

**Socio-economic status**

**Does income currently satisfy needs**

**Home ownership**

**Education**

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**Communication to engage in wider community**
1. Read English or French
2. Write English or French

**Living situation**
3. Marital status
4. Lives alone

**Social support**
5. Someone to count on for help or support
6. Feel need more help or support
7. Someone to count on for transportation
8. Feel need more help with transportation
9. Someone to count on for help around the house
10. Feel need more help around the house
11. Someone to count on to listen
12. Feel need more people to talk with
13. Number of people spend time with regularly
14. Feel need to spend more time with friends/family
15. Someone to turn to for advice
16. Feel need more advice about important matters

**Socially oriented Activities of Daily Living**
17. Telephone use
18. Get to places out of walking distance

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Survival of the fittest: Social vulnerability matters!

<table>
<thead>
<tr>
<th>Frailty Index</th>
<th>Total</th>
<th>Survived</th>
<th>Died</th>
<th>Absolute mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low SV</td>
<td>250</td>
<td>220</td>
<td>29</td>
<td>11.6%</td>
</tr>
<tr>
<td>Med SV</td>
<td>129</td>
<td>106</td>
<td>23</td>
<td>17.8%</td>
</tr>
<tr>
<td>High SV</td>
<td>57</td>
<td>39</td>
<td>18</td>
<td>31.6%</td>
</tr>
<tr>
<td>Total</td>
<td>436</td>
<td>365</td>
<td>70</td>
<td></td>
</tr>
</tbody>
</table>

Cox regression model adjusted for age and sex

20% absolute increase in risk of mortality
Socially vulnerable people have higher odds of suffering cognitive decline

Andrew & Rockwood. Alzheimers & Dementia, 2010
Neighbourhood deprivation is associated with frailty, independent of personal wealth.

Predicted frailty index by wealth and neighborhood deprivation, both split by quintiles, in fully adjusted models (age, sex, education, rural/urban residence, residential mobility, smoking, BMI)

Lang, Hubbard, Andrew et al, JAGS. 2009
Neighbourhood deprivation in urban areas is associated with cognitive function in older adults independent of the effects of individual and household socioeconomic factors.

Risk factors for dementia

• Traditional Dementia Risk Factors
  – Age
  – Heart disease, hypertension, stroke
  – High cholesterol
  – Sedentary lifestyle
  – Pesticide exposure
  – Dementia in a spouse
  – Feeling tired, lonely or unwell

• BUT… these known risk factors still have poor discriminative prediction

Song, Mitnitski and Rockwood *Neurology* 2011;77:227-234
Non-traditional Risk Factor Index

- How good is your health?
- Eyesight
- Hearing
- Dentures fit
- Arthritis or rheumatism
- Eye trouble
- Ear trouble
- Stomach trouble
- Kidney trouble
- Loss of bladder control
- Loss of bowel control
- Trouble with feet or ankles
- Nose stuffed up or sneezing
- Fractures
- Chest problems
- Cough
- Skin problems
- Dental problems
- Other problems
Frailty and dementia

- Non-traditional Risk Factor index
- 19 items
- Odds of dementia increased by 3.2% ($p = 0.021$) for each deficit accumulated
  - adjusted for age, sex, education, and baseline cognition
- Notably, the index of non-traditional dementia risk factors outperformed the known individual cognitive risk factors

Song, Mitnitski and Rockwood *Neurology* 2011;77:227-234
Both death and incident dementia increased with increasing burden of non-traditional RFs.

Song, Mitnitski and Rockwood

*Neurology* 2011;77:227-234
Implications for clinical care

Management of dementia:

• Encourage physical exercise and social activity
• Control of vascular Risk Factors
• Investigations as required
• Home supports for patient and caregiver
  – Safety considerations
• Medications
  – optimize treatment for existing conditions
  – try to decrease/stop unnecessary or potentially harmful medications
  – consider specific medications for dementia and related symptoms
• Establish a follow-up plan
Implications for clinical care

• Social vulnerability and frailty are frequent contributors to “social admissions to hospital”
  – A pressing issue for our acute care system
• A useful framework for clinical care, workup, management and discharge planning
• We need to get this right

• Relevance for institutions and communities...
Key points

- Social Vulnerability is important
  - individual (clinical care implications)
  - population health
  - biomedical

- Frailty (having many things wrong at once, even seemingly unrelated to dementia) is an important risk factor for dementia

- We must expand our “bench to bedside” thinking to include population health impacts and applications

- Our research and care are informed in important ways by the arts and social sciences
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