

Network social capital reduces the odds of developing hypertension in urban adults

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Presenter Disclosures

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Background: Hypertension




- High blood pressure was the leading risk factor for global disease in 2010. (Global Burden of Disease Studies)
- Six million Canadian adults, or one in five, have high blood pressure, representing 19% of the adult population.¹
 - 83% are aware of their condition (80% for men and 87% for women)
- In the U.S., about 1 of 3 U.S. adults—or 67 million people—have high blood pressure with more than 348,000 deaths in 2009 citing high blood pressure as a primary or contributing cause. (CDC)

Background: Social capital and hypertension




- Network social capital
 - Resources to which individuals or groups have access through their social networks.
- Cross-sectional studies
 - Interpersonal level
 - Social integration (Gorman & Sivaganesan, 2007)
 - Social support (Bell, et al., 2010)
 - Social trust, group networks (Malino, et al., 2014)
 - Network social capital² (Moore et al., 2014)
- Prospective studies
 - Interpersonal
 - Social integration³ (Yang, et al., 2014)

Research question



- Does network social capital help reduce the odds of developing hypertension over a two-year period?

Methods: Sample



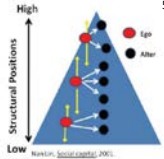
Montreal Metropolitan Area

Stratified cluster sampling

Wave 1
 Census tracts
 n_{CT} =300 (high, middle, low income)
 Age Categories
 n =9/CT (25-44; 45-64; 75+ years)
 n =2707
 Response Rate: 38.7%

Wave 2
 n_{CT} =300
 n =1400
 W2 Participation Rate: 51.7%

Methods: Measures



- Hypertension outcome**
 - Hypertension: Systolic BP \geq 140 or Diastolic \geq 90
 - Self-reported doctor-diagnosed high blood pressure
 - Hypertension at W1 excluded (2008), n =330
 - Hypertension or not at W2 (2010)
- Network social capital**
 - Position generator
 - Diversity, Reach, Range at W1
- Socio-economic, –demographic and BMI confounders**
- Multilevel logistic regression**

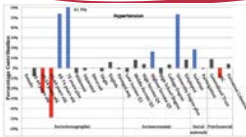
Results: Sample Characteristics, n=1070

Selected Variables	Percentage/Mean (Std. Err.)
Hypertension at Wave 2	7.9% (0.01)
Female	62.7% (0.01)
Network social capital	0.11 (0.03)
65 years and older	20.8% (0.01)
45-64 years old	41.2% (0.01)
High school degree or less	30.8% (0.01)

Results: Multilevel logistic regression

Significant Variables	Odds Ratio (95% CIs)
Network social capital	0.70 (0.54-0.92)
Female	0.59 (0.36-0.96)
Age (65+)*	8.03 (1.66 – 38.83)
BMI	1.09 (1.05-1.16)

Discussion



- Network social capital reduced odds of developing hypertension from 2008-2010.
- Social isolation, older age, and socioeconomic factors contributed.²
- Protective benefits of network diversity (weak ties) may include social integration, sense of autonomy, and access to resources.
- Positive affect and coping that comes with diversity may reduce impact of environmental and social stressors on physiology.

- ### Limitations
- Self-reported hypertension at two time points
 - Change in sample composition from wave one to two
 - Physiological stress measures
 - Urban-dwelling adults

Key References



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Thank you.



Publication List

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