Social Support Availability and Depressive Symptoms Among Middle- and Older-aged Adults: A Preliminary Analysis of Baseline Data from the Canadian Longitudinal Study on Aging

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Background

- Epidemiological research has shown social engagement to be protective against a range of adverse health outcomes
- Social support availability (SSA) is especially important as populations age
  - Impact of chronic diseases is mitigated if an individual is surrounded by a support network of persons who can help with caregiving (meals, cleaning, transportation, etc.) and provide companionship
  - Support networks also prompt individuals to seek early medical attention
- Depression is associated with many chronic diseases (e.g., dementia)
- Companionship helps fight depression
Research Question & Hypothesis

- What is the association between SSA and depressive symptoms (DS) in middle- and older-aged persons in Canada?
- Higher levels of SSA will be inversely associated with DS
Study Sample

- 29,842 participants aged 45 – 85 years from the Canadian Longitudinal Study on Aging (CLSA)
- Recruited through Ministry mailouts and random digit dialing from within 25-50 km of 11 cities across Canada
- Data collected at an in-home interview and at a data collection site visit (‘CLSA Comprehensive’)
- Baseline data included in this analysis
Methods

- SSA was measured using the 19-item Medical Outcomes Study Social Support Survey
  - Generated continuous scores from 1 (low SSA) to 5 (high SSA) on an overall SSA scale and four subscales:
    - Emotional/informational
    - Tangible
    - Positive social interaction
    - Affectionate
Methods

- DS were measured using the 10-item Center for Epidemiologic Studies Depression Scale (CES-D10)
  - Yielded scores between 0 (no DS) and 30 (maximum DS)
  - Dichotomized
    - > 10 is presence of DS
    - 10 or less is no presence of DS
Methods

- Regression analysis controlling for age and sex
- Separate model for SSA overall and each subscale
- Logistic regression – CES-D10 dichotomized
  - Low AUC (0.73)
- Linear regression – CES-D10 continuous
  - Closest to gamma distribution
  - Funnel shaped residual plot (predicted*studentized residual)
Methods

- Generalized additive models
  - CES-D10 continuous outcome (gamma distribution)
  - SSA overall or subscale (main effect)
  - Additional covariates for age, age*age, sex, and SSA*SSA*SSA

- Used CLSA sample weights
  - Estimate how many people in each province (and in Canada) are represented by each CLSA participant
  - Ensure that the regression coefficients are representative of the entire population eligible to participate
Results

Median age = 62 years

51% female
Results

Median total score = 4.0
IQR = 5.0
No 88%
Yes 12%
Results

Median total overall score = 4.42
IQR = 0.95

Median total scores for subscales between 4.21 to 4.44
Results
Results

- Regression coefficients were negative, indicating an inverse association between SSA and DS.

- Changes in DS score ranged from -0.4402 to -0.1288, depending on the SSA subscale and the change in SSA score (e.g., from 1 to 2, from 4 to 5).
  - All 95% confidence intervals excluded the null value of 0.

- Due to the quadratic nature of the SSA scores, a single regression coefficient could not represent the change in DS score associated with a one-unit change in SSA score.
Results

Changes in CESD-10 Score by Changes in Social Support Availability Subscale

SSA Scale Score Comparison
Discussion

- SSA and DS were inversely associated in this study
  - Results were statistically significant yet unlikely to be clinically significant
Discussion

**Strengths**
- Large national sample
- Middle- to older-aged sample permits one to study the question from a life-course perspective (a study of aging, not a study of the aged)

**Limitations**
- Included few potential effect modifiers / confounders
- Cross-sectional: reverse causality bias (increased depression could lead people to withdraw from social activities)
- Selection bias (?): most participants had high levels of SSA and low levels of DS
  - Longitudinal changes will be interesting to observe
Next Steps / Acknowledgments

- Assess larger sets of potential effect modifiers and confounders
- Analyze the data longitudinally when follow-up CLSA data become available

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The End