

# 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)



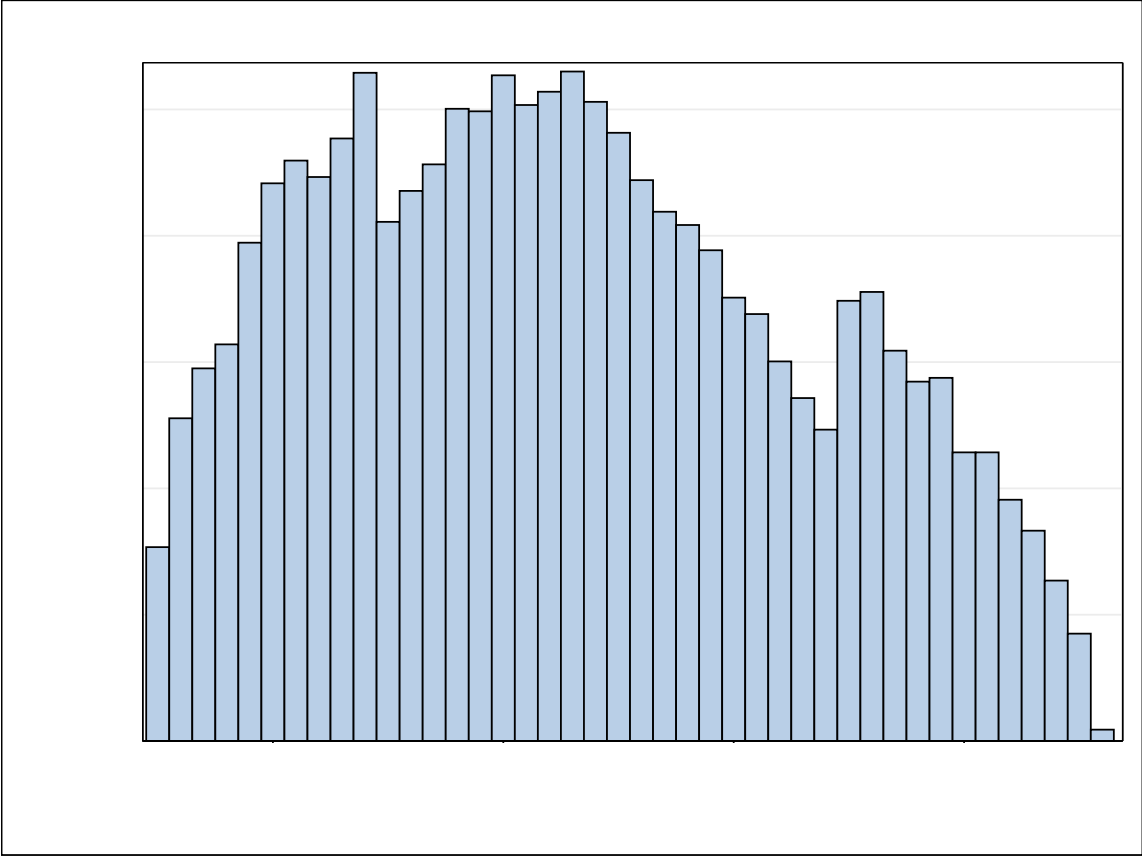


# Methods

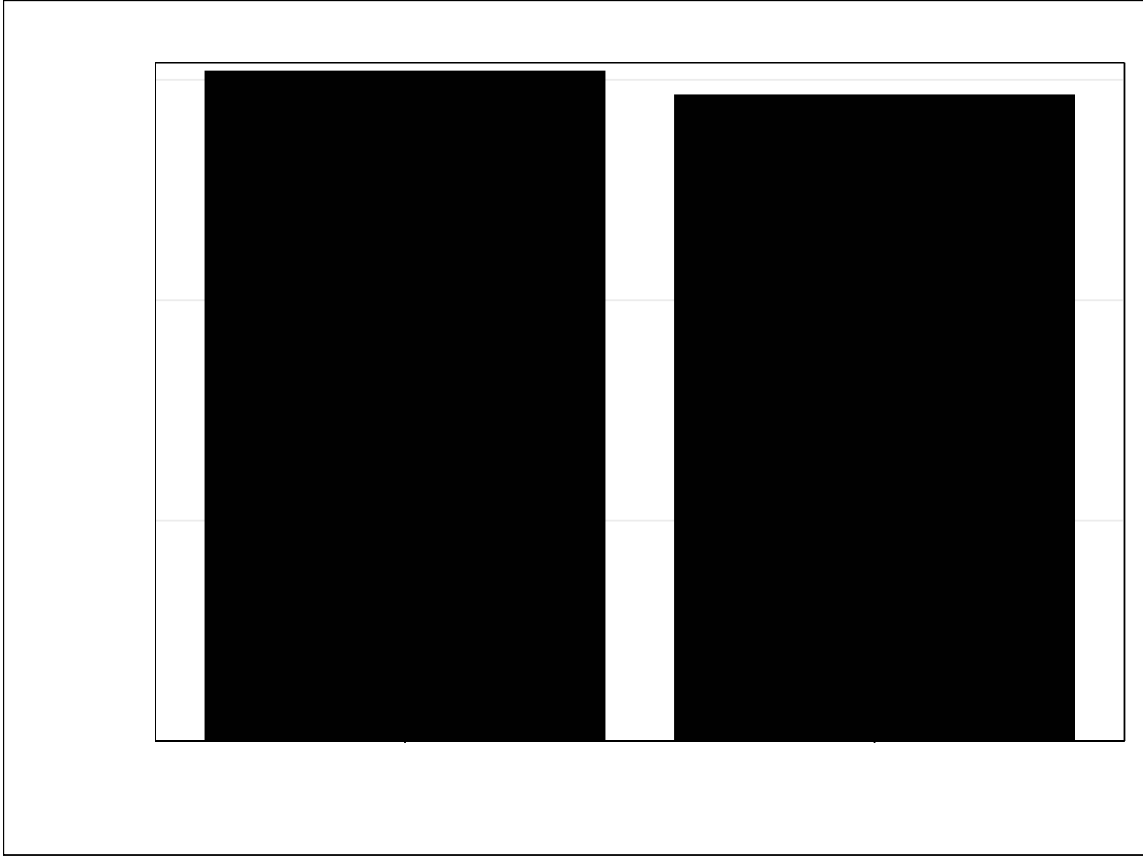
- **Generalized additive models**
  - CES-D10 continuous outcome (gamma distribution)
  - SSA overall or subscale (main effect)
  - Additional covariates for age, age\*age, sex, and SSA\*SSA\*SSA
- **Used CLSA sample weights**
  - Estimate how many people in each province (and in Canada) are represented by each CLSA participant
  - Ensure that the regression coefficients are representative of the entire population eligible to participate



# Results

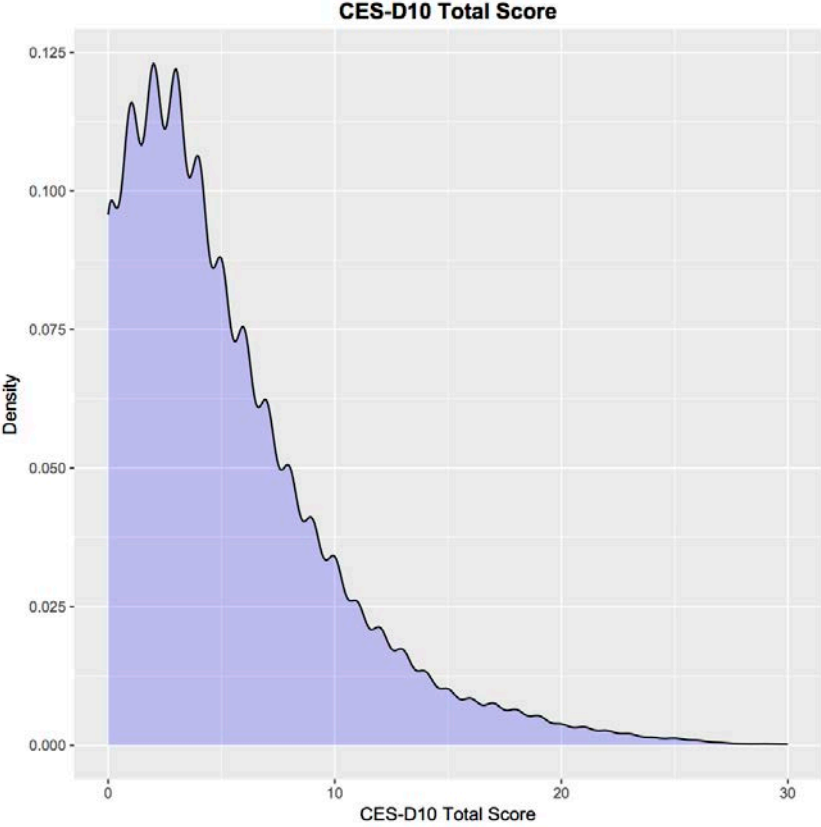
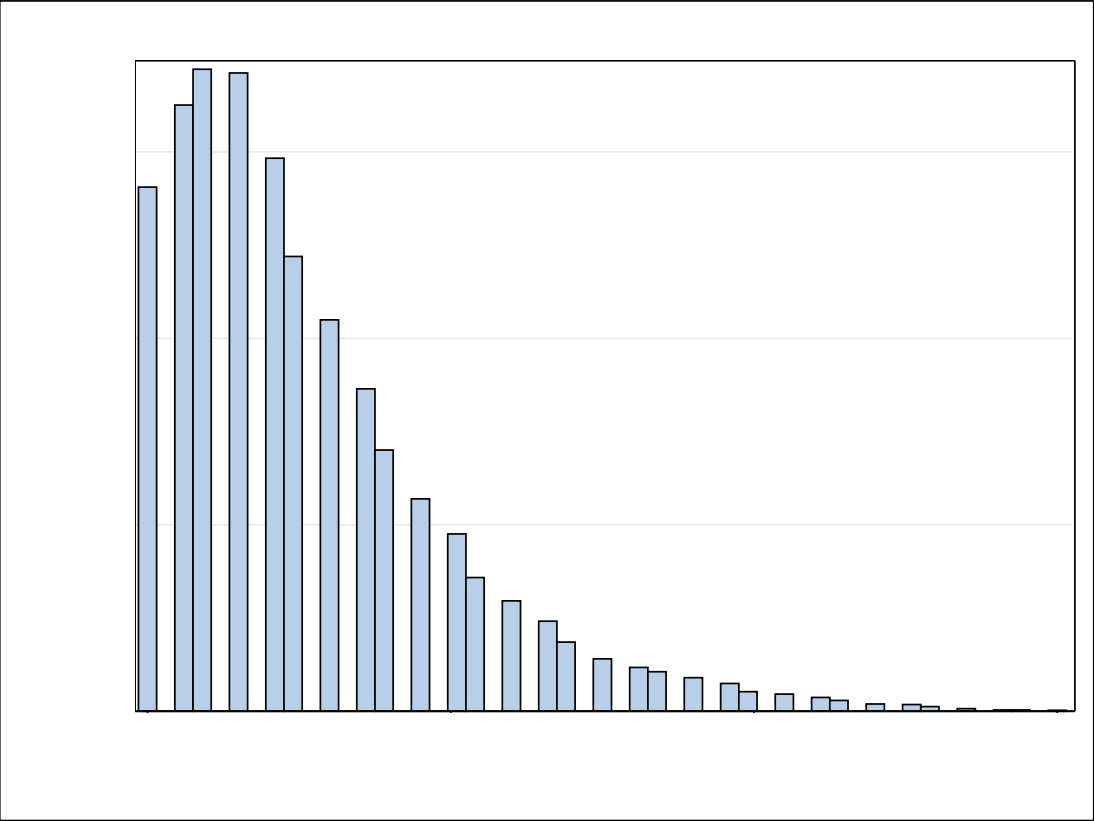


Median age = 62 years



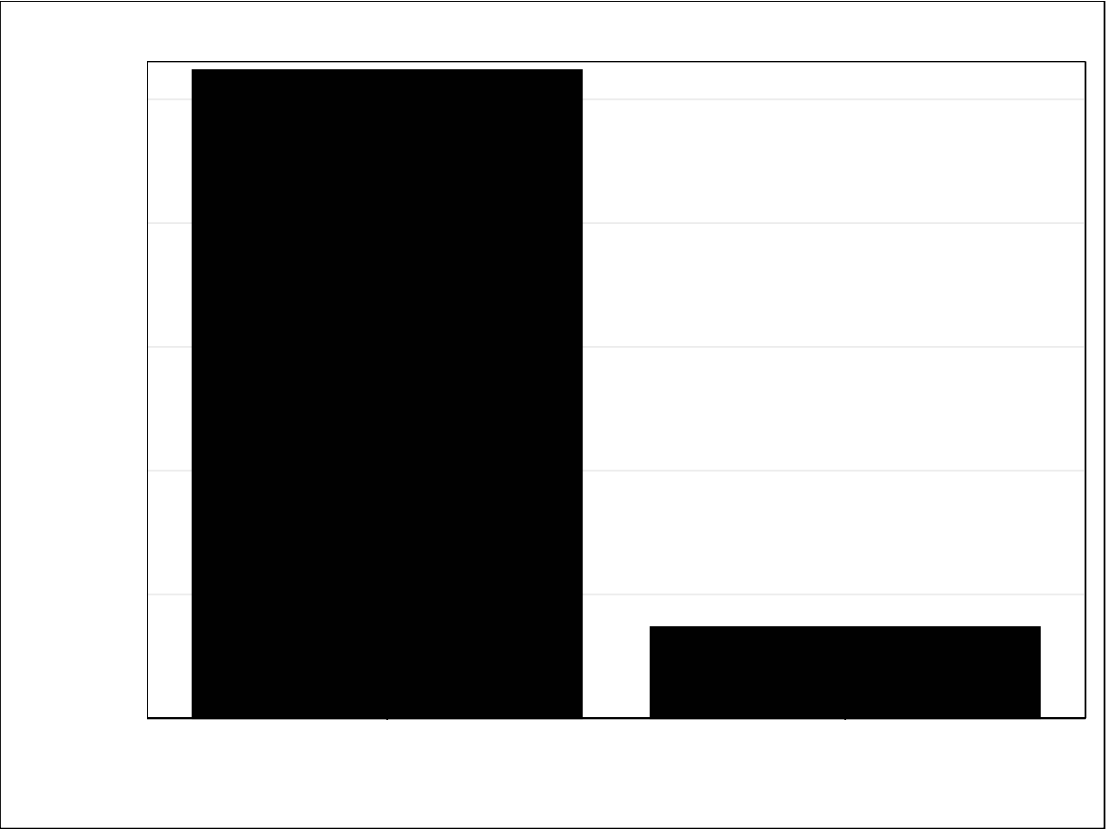
51% female

# Results



**Median total score = 4.0**  
**IQR = 5.0**

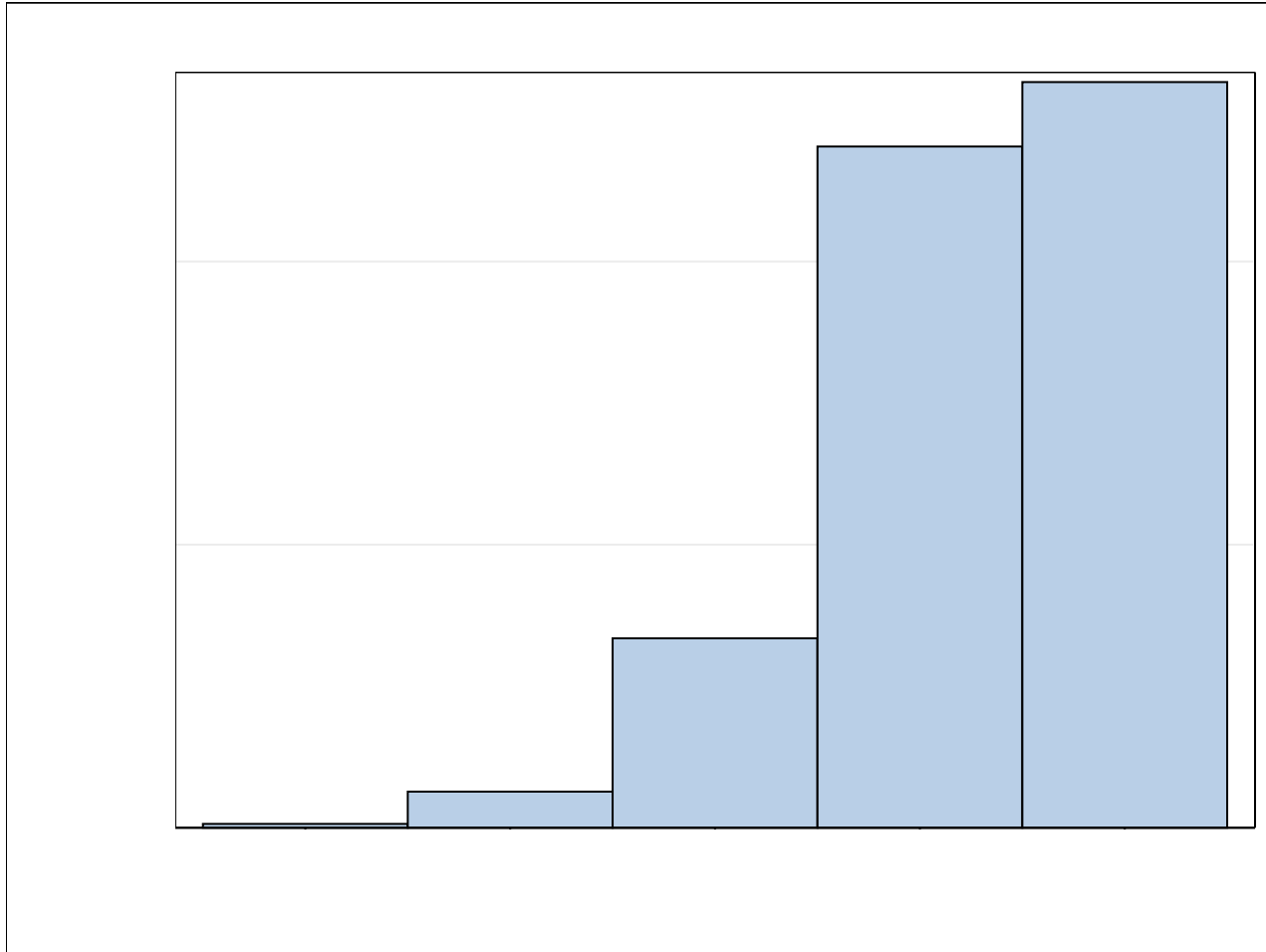




**No 88%**  
**Yes 12%**



# Results

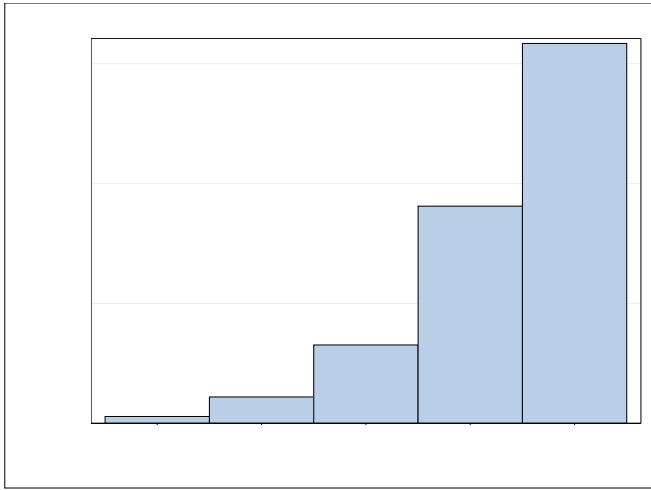
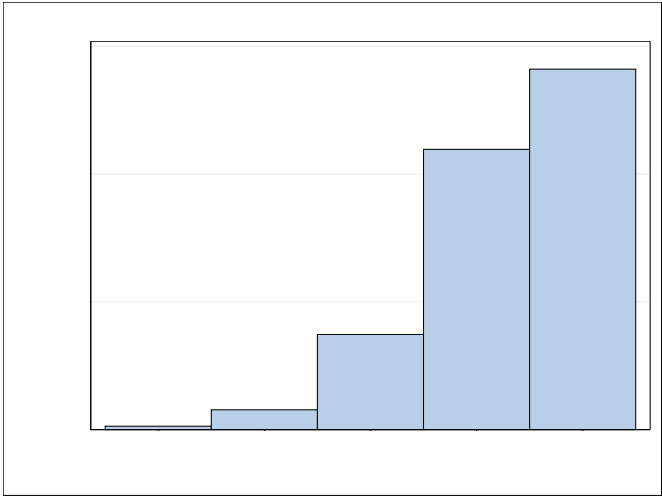
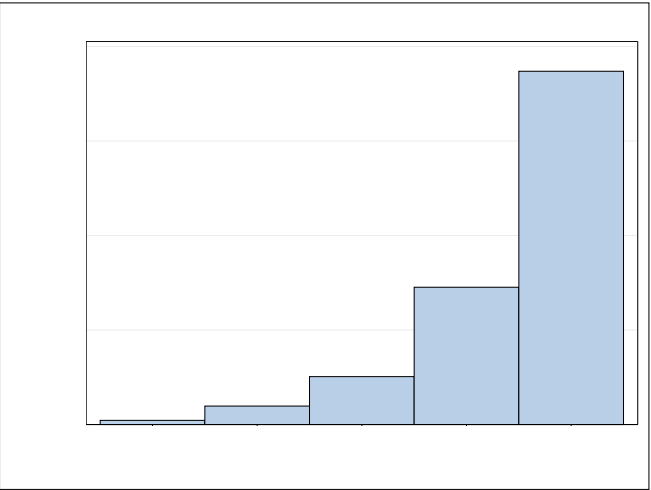
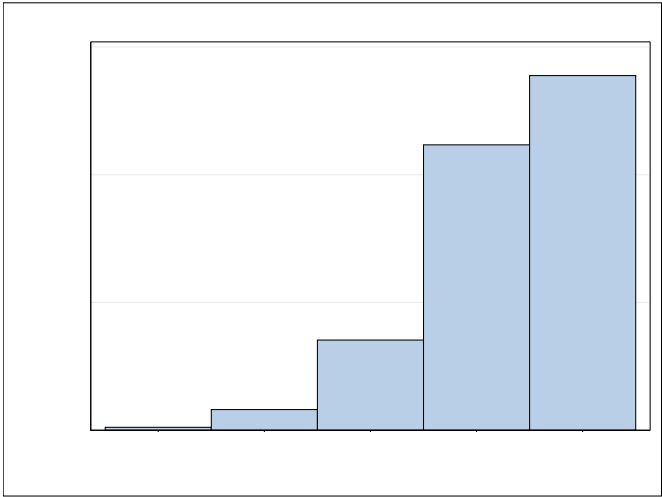


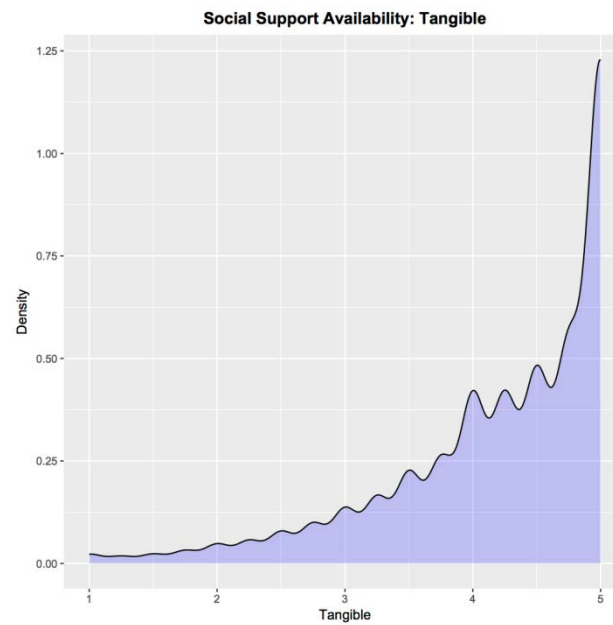
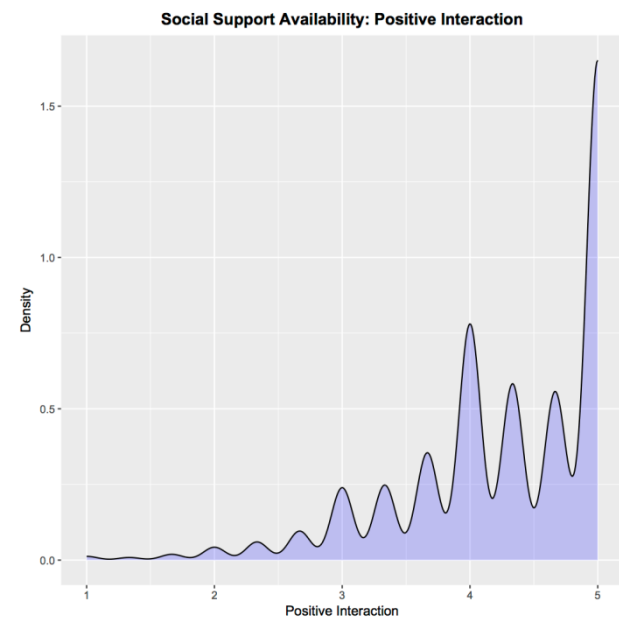
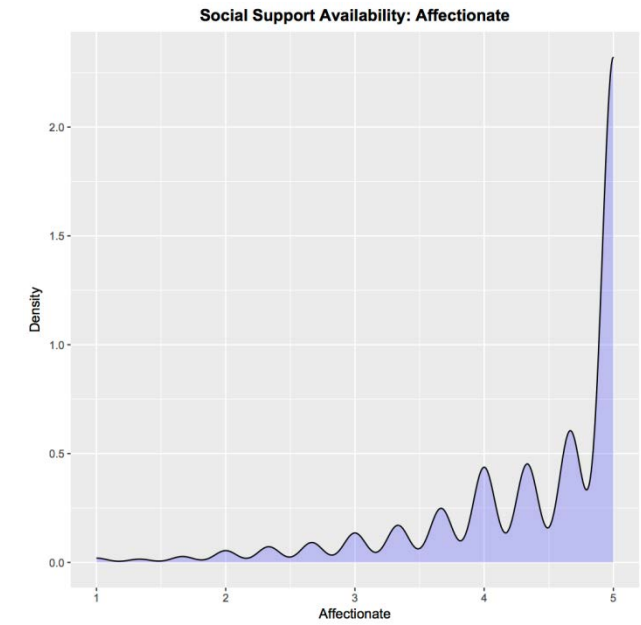
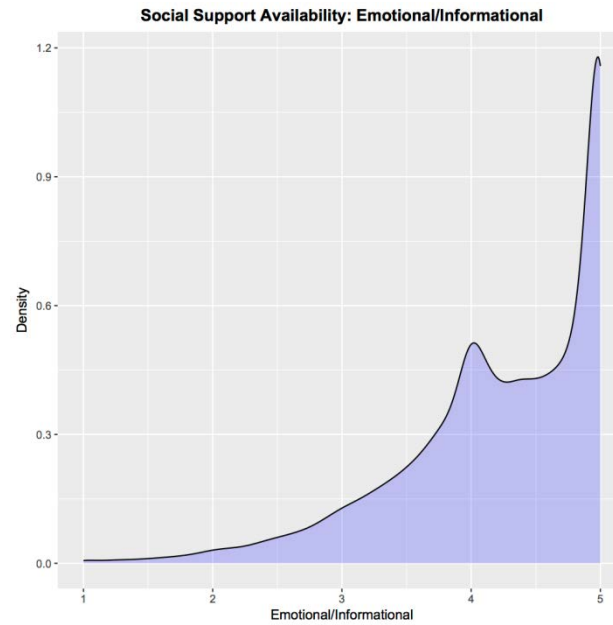
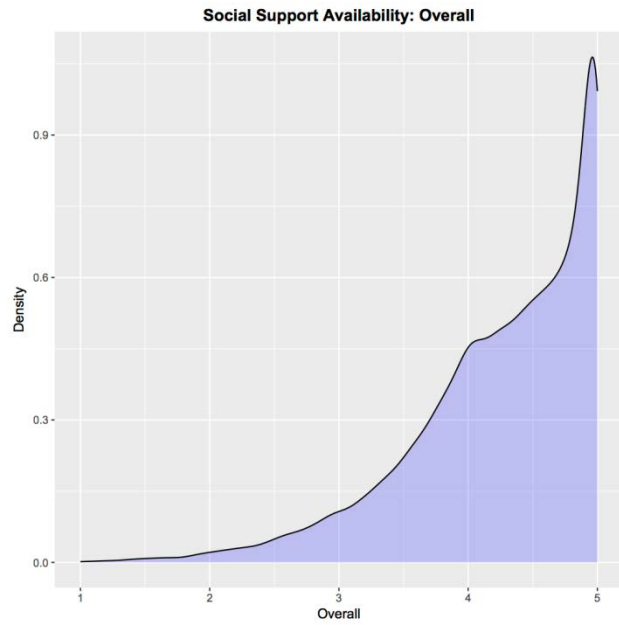
**Median total overall score = 4.42**  
**IQR = 0.95**

**Median total scores for subscales  
between 4.21 to 4.44**



# Results





# Results

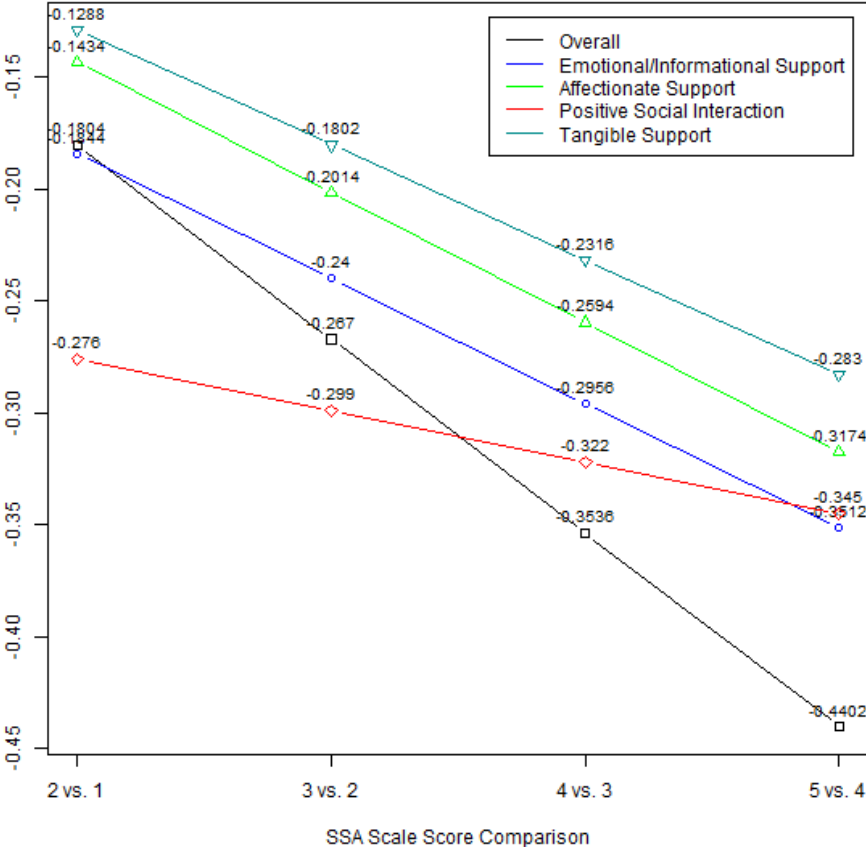
- Regression coefficients were negative, indicating an inverse association between SSA and DS
- Changes in DS score ranged from -0.4402 to -0.1288, depending on the SSA subscale and the change in SSA score (e.g., from 1 to 2, from 4 to 5)
  - All 95% confidence intervals excluded the null value of 0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





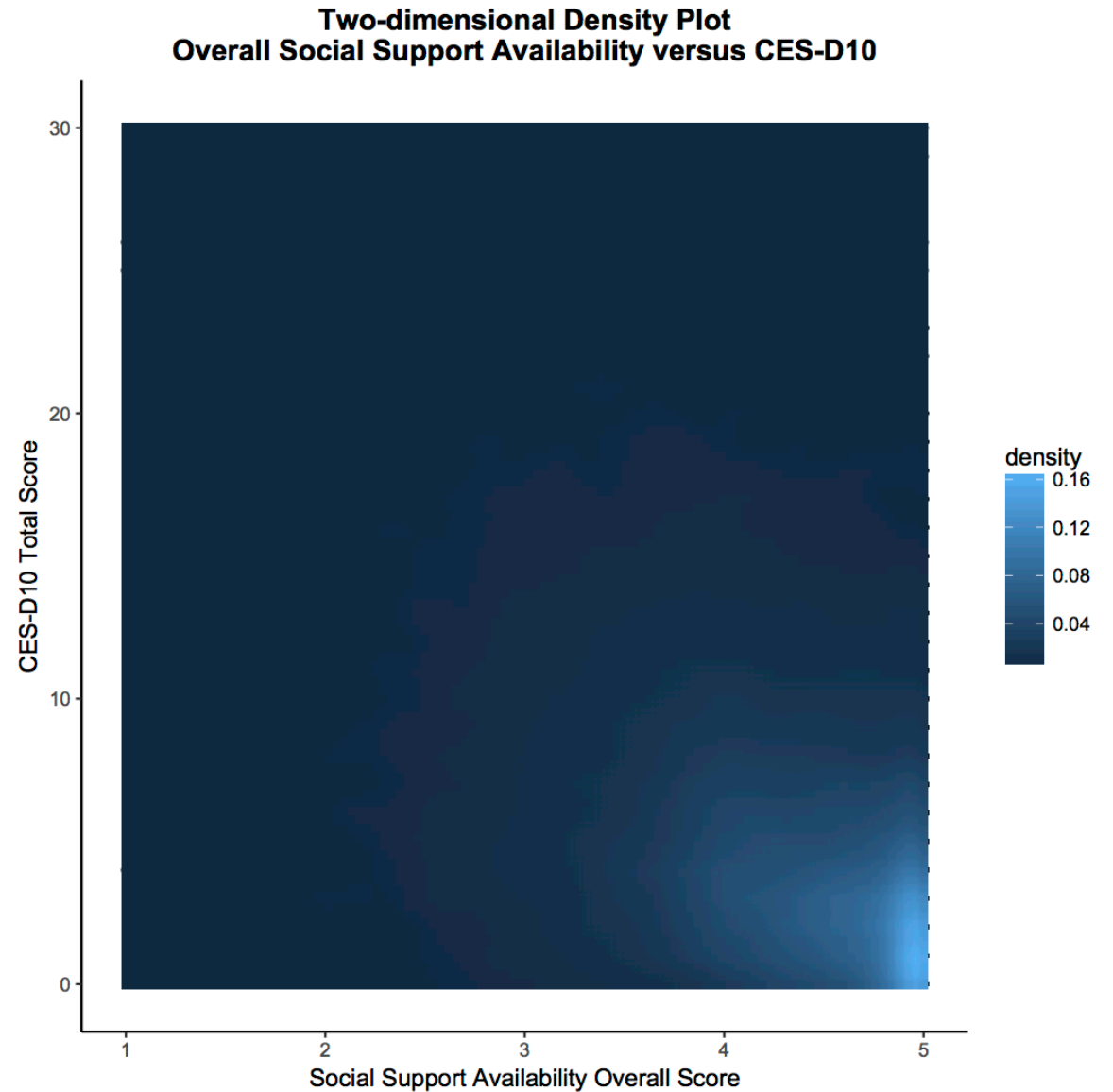
# Results

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



# 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
- This research was made possible using the data collected by the Canadian Longitudinal Study on Aging (CLSA). Funding for the CLSA was provided by the Government of Canada through the Canadian Institutes of Health Research (CIHR) under grant reference number LSA 9447 and the Canada Foundation for Innovation. The analyses reported in this presentation utilized the CLSA Comprehensive data v.1.0 (Baseline plus Cognition).
- CIHR Catalyst Grant



# The End

