

There is an urgent need to identify modifiable risk factors for late life cognitive impairment. Loneliness is associated with functional impairment and mortality in older adults. Using data from the 2011 wave of the Wisconsin Longitudinal Study (n = 4,349; mean age: 71.27, SD: 0.948), we examined the relationship between a subjective sense of loneliness, poorer health, and measures of executive functioning (Wechsler Adult Intelligence Scale subtests: Digit Span and Similarities). A composite measure of loneliness and self-rated health was created to predict cognitive function. Covariates included number of years of education, age, and depressive symptoms. Results suggest that loneliness, in conjunction with self-rated health, is associated with executive function, specifically working memory and abstract reasoning. These findings are consistent with other comparable cross-sectional studies of loneliness and cognition. As such, subjective indicators of social isolation and self-rated health are potential modifiable risk factors for late life cognitive impairment. Future research should examine interventions to ameliorate the negative effects of loneliness in older adults.

Research Questions

- Does loneliness predict lower cognitive functioning at one time point?
- Does subjective rated health impact the effect of loneliness on cognitive functioning?

Loneliness and Cognitive Functioning

- Higher self-reported loneliness correlates with worse cognitive functioning across domains, including general cognitive functioning, memory, executive functioning, crystallized ability, visuospatial ability and processing speed (Boss, Kang, & Branson, 2015).
- Loneliness is a risk factor for Alzheimer’s disease and related dementias
- Prospectively, loneliness predicts decline in general cognitive function, immediate and delayed memory recall, and working memory
- Association is independent of social activity/network, depressive symptomatology, education, and functional ability.
- Loneliness and cognitive functioning correlate with dysfunction of same physiological systems (Juster, McEwen, & Lupien, 2010).

Results

- Subjective feelings of loneliness and self rated health at time *t*-1 negatively predict verbal abstraction abilities (*p* = .028) and attention/working memory (*p* = .017) at time *t*-1 , adjusting for all covariates.
- No support for the second or third latent factors of loneliness predicting cognition(**Figure 1**).



Loneliness and Cognitive Function in Late Life
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Method

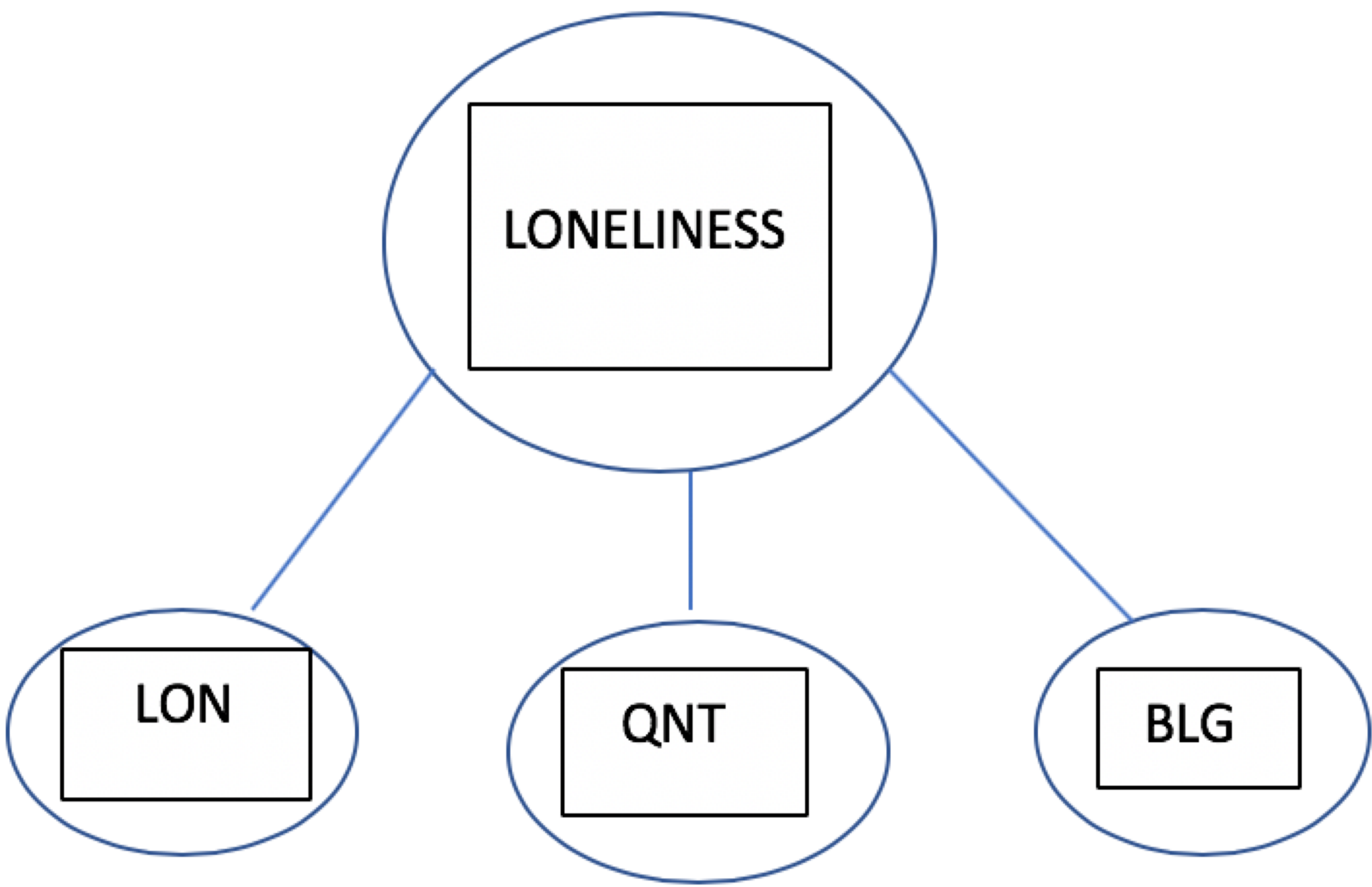
Participants:

- 4,349 older adults (age = 71.27 (*SD* = 0.948); in the Wisconsin Longitudinal Study from the 2011 wave of Data Collection for graduates.

Measures

- Weschler Adult Intelligence Scale (Similarities and Digit Span)
- Composite Measures (**Figure 1**)
 - LON (Number of days in last seven days lonely + Subjective self-rated overall health)
 - QNT (How many times they got together with friends/family)
 - BLG (Feels supported by presence of positive, trusting relationships and social networks)
- Covariates: Age, gender, educational attainment, BMI.

Figure 1. Composite Measures of Facets of Loneliness



Note. "LON" is a composite predictor comprised of number of days the past week the participant felt lonely and a subjective self-rated health item. "QNT" is a composite that reflects quantity of time spent with family and friends in the past week. "BLG" is a composite that reflects the extend to which the participant felt supported by warm trusting people they can confide in and extent to which they thought others had more friends. This three factor model of loneliness is consistent with prior literature (Cacioppo et al., 2014).

Data Analysis:

- Structural Equation Modeling using Exploratory and Confirmatory Factor Analyses was utilized to create three composite measures of loneliness. The analysis provided a three-factor model of loneliness to be regressed on the measures of cognitive functioning.
- Multiple imputation to handle monotonic missing data patterns.
- Regress loneliness composites on tests of working memory/attention and verbal abstraction cross-sectionally.

Conclusions

- Loneliness in past week/self rated health at time *t*-1 negatively predicts working memory/attention and verbal abstraction at *t*-1.
- Strengths: Demonstrates true effects of loneliness on cognitive functioning cross sectionally; large representative sample of community-dwelling older U.S. adults.
- Weaknesses: large percentage of missing data in study design; although items from composite measures were standardized, they were from different surveys.
- Future research should investigate potential mediating mechanisms between loneliness and cognitive functioning in other samples and consider mediating effects of other psychological constructs and health risk.

Acknowledgments

The research uses data from the Wisconsin Longitudinal Study, funded by the National Institute on Aging (R01 AG009775; R01 AG033285).

References available upon request from
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