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Structural and Health-Related Factors Associated with Loneliness in Older Vermonters

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INTRODUCTION

- Among Vermont older adults, 7% report usually or always feeling socially isolated.³ This was associated with increased mortality and higher risk for cardiovascular, metabolic and neurological disorders; thus, loneliness, social isolation and its driving factors continue to attract in-depth research.
- Loneliness** describes a self-perceived, subjective emotional state, while **social isolation** describes an objective social condition.¹
- Missing from established literature are specific social and structural determinants associated with loneliness in Vermont-based, community seniors.
- Contributors to loneliness that were explored across several older, adult populations in Vermont:
 - Reliable transportation:** crucial to establishing social connection and has great potential to influence loneliness in both urban and rural Vermont populations
 - Perceived health and disability:** hearing, vision, mobility, independence, and cognitive capacities all influence social connection opportunity and quality
 - Social network and sense of belonging:** established companionship is the crux of perceived loneliness

STUDY AIMS

Aim 1: Evaluate associations between patient factors (demographic, structural, and health-related), social isolation, and loneliness among older adult Vermonters.

Aim 2: Assess domains for improvement in transportation access and sense of community belonging for older adult Vermonters.

Aim 3: Provide recommendations to improve the infrastructure for transportation and community support for older adult Vermonters.

METHODS

- Study Population:** Older adults (55+) currently residing in Vermont who self-identify as utilizing senior centers and/or senior housing
- Study Design:** Participants provided informed consent to complete a 32-item self-reported REDCap survey that included validated survey instruments, short-answer questions, and demographic questions
 - Participants could complete the survey in-person with a member of the research team, mail in their survey responses, or remotely using a survey link
- Data Collection Period:** November 6th, 2025 – December 5th, 2025
- Validated Survey Instruments:** Transportation Insecurity Index (TSI-6), 1-item Self-Rated Health, Behavioral Risk Factor Surveillance System (BRFSS-6), Lubben Social Network Scale (LSNS-6), UCLA 3-Item Loneliness Scale
- Statistical Analysis:** Data collected with REDCap and analyzed using Excel for descriptive and inferential statistics (Two Independent Sample t-Test)

RESULTS

Table 1: Participant Characteristics (N=64)

	n	%
Age		
55-64	10	15.6%
65-74	19	29.7%
75-84	27	42.2%
85+	8	12.5%
Gender		
Woman	52	81.3%
Race		
White Non-Hispanic	60	93.8%
Non-White	4	6.3%
Currently Employed		
No	54	84.4%
Location at Time of Survey		
Private Residence	27	42.2%
Senior Center	22	34.4%
Senior Housing	12	18.8%
Other	3	4.7%
Functional Disability		
One or more	41	65.1%
Mobility	23	35.9%
Vision	19	29.0%
Daily Activities	17	27.0%
Hearing	16	25.4%
Cognition	9	14.1%
Self-Care	6	9.4%

Figure 1: Survey Respondents by VT County

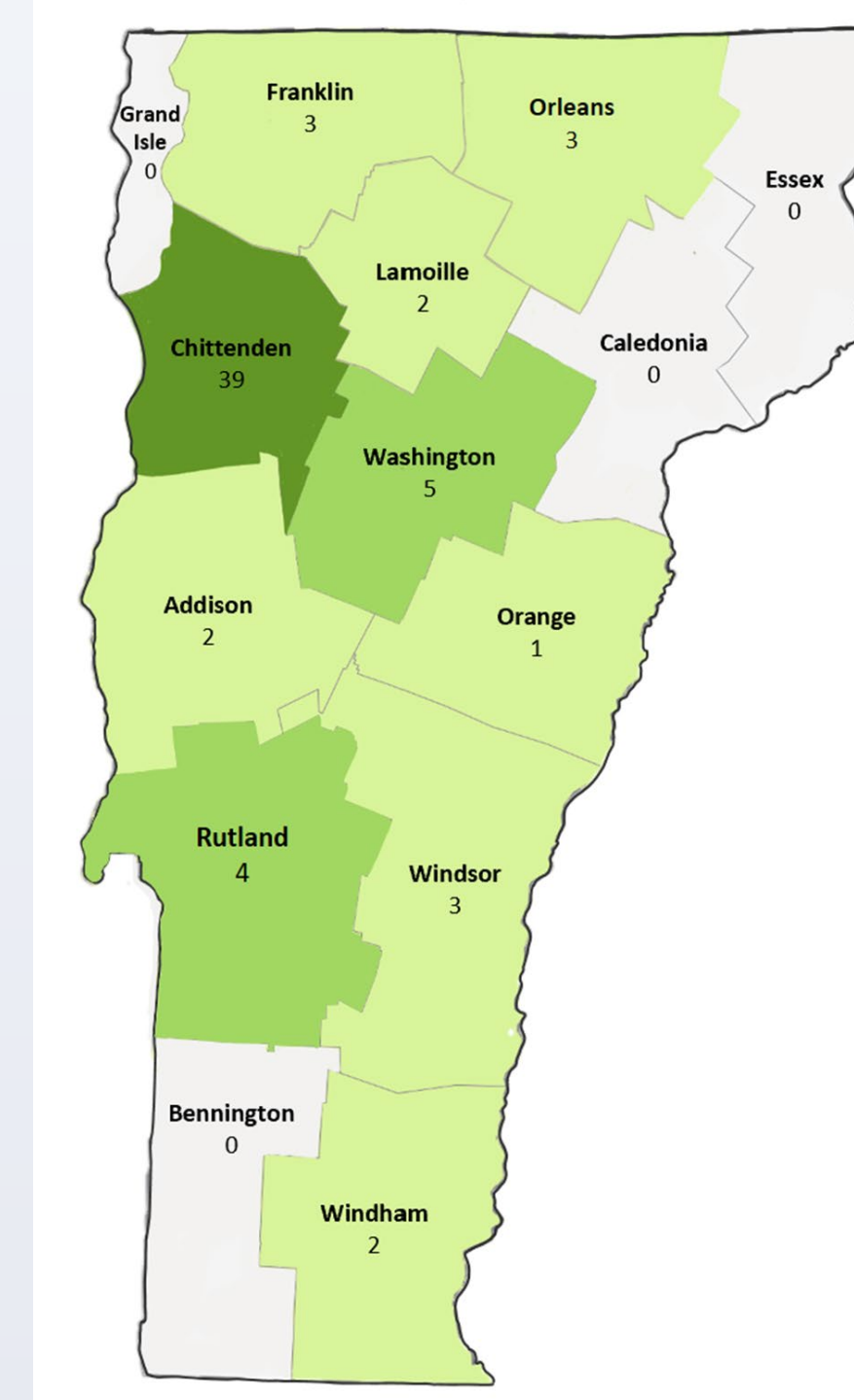
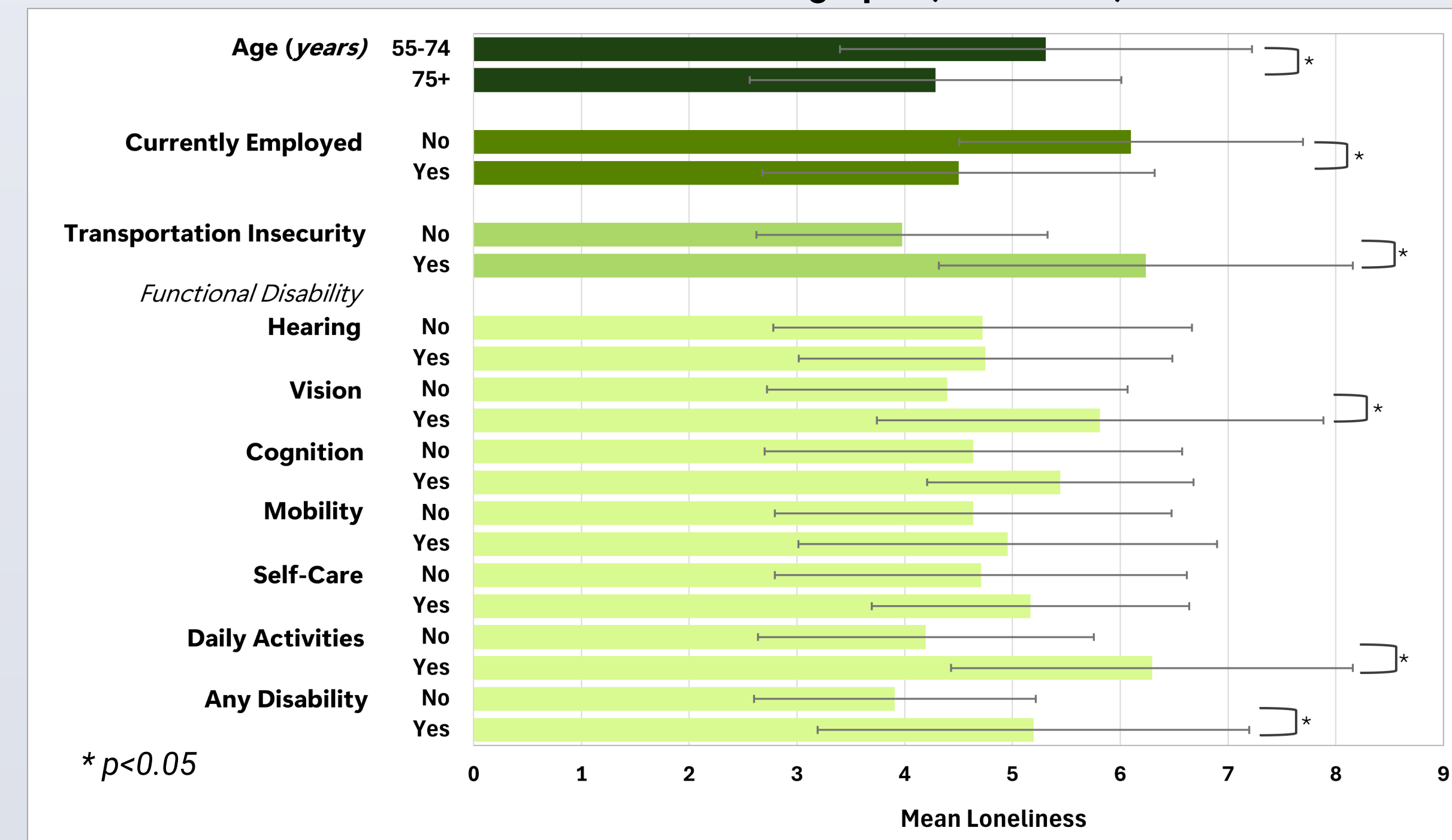


Figure 2: Associations between Loneliness and Demographic, Structural, and Health-Related Factors



- Greater loneliness was significantly associated with higher age ($p=0.027$), current employment ($p=0.012$), transportation insecurity ($p<0.001$), and functional disability ($p=0.009$)**
- Respondents completing the survey from private residences reported significantly higher loneliness than those in senior housing ($p=0.020$).
- Respondents ages 75+ ($p=.016$) and those with cognitive impairment ($p=0.0364$) reported a significantly smaller social network,
- Greater loneliness was significantly associated with a smaller social network ($p<0.001$).**

Figure 3: Reported areas for improvement in transportation and sense of belonging

What would be the most helpful change(s) you would like to see regarding transportation?

- Expanded Bus Access**
"More bus routes"
"Expanded operation times"
- New/On-Demand Options**
"Some sort of transportation between a taxi and bus."
- Improved SSTA**
"More useful and not so domineering."
"Having SSTA become more flexible."

What changes could help you feel a stronger sense of belonging in your community?

- Community Programs**
"More local programs that bring seniors together."
"There is no senior center where I live."
- Personal Effort**
"Get off the couch... make an effort to stay busy."
- Transportation Access**
"Public affordable transportation."
"It can be hard in the winter when it is snowy and I don't want to drive."

DISCUSSION & CONCLUSION

- Factors contributing to increased loneliness and social isolation among older Vermonters included:
 - Loneliness:** Higher age, current employment, transportation insecurity, functional disability, smaller social networks, and completing the survey from a private residence vs senior housing
 - Social Isolation:** Higher age, significant cognitive impairment
- Qualitative responses emphasized the **need for expanded bus routes, improved Special Services Transportation Agency (SSTA) flexibility with increased rural coverage, accessible senior programs, and regular community activities** that provide structure, motivation, and a sense of belonging.
- These findings mirror national patterns**, as transportation barriers, functional limitations, and reduced social networks are recognized contributors to loneliness and social isolation among older adults at the national level.²
- Strengths:** the use of validated instruments, a mixed-methods design, and community-based survey administration
- Limitations:** modest sample size, limited demographic diversity, and the cross-sectional, self-reported nature of the data

These findings highlight the urgent need to strengthen transportation systems and community infrastructure to reduce loneliness and support healthy aging among older Vermonters.

RECOMMENDATIONS

Expanding transportation infrastructure, including expanding bus routes and frequency, supporting rural access routes, improving SSTA reliability, and having more options for transportation, such as community vans, to fill in gaps otherwise unmet

Offering more programming tailored for seniors with functional impairments such as mobility or visual disabilities

Conducting further research with seniors who are home-bound or unable to attend programs at community facilities

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