

Objective

To evaluate the association of nutritional status and rurality with falls in community-dwelling older adults.

❖ We found an increased risk of falls among older adults with high nutrition risk, but not among older adults living in rural communities.

Conclusions

❖ Nutrition screening may help to identify older adults at risk of falling.

❖ Findings suggest a need to identify aspects of nutrition that are most protective against fall risk and services to best alleviate malnutrition.

Background

Nutritional status is a primary contributor to sarcopenia and frailty, but the association with fall risk is less defined.

Rural residence is associated with health disparities, and yet, few studies have examined the relationship of rural-urban residence on fall risk.

Methods

Data Source

- Secondary analysis of health risk assessment from participants in the Support Services at Home (SASH) program in Vermont; collected in 2017-2019

Population

- Community-dwelling, Medicare beneficiaries (N=3300) receiving supportive home services

Measures

- DETERMINE Nutrition Risk Assessment
- Fall Risk Questionnaire (FRQ) + Fall History
- Demographics including Rural/Urban per RUCA
- Functional limitations: ADLs/IADLs

Analyses

- Chi-square tests to examine the associations between nutrition risk, rurality, and fall risk.
- Multivariate logistic regression with a new fall as the primary outcome, nutrition risk and urban/rural residence as independent variables; model adjusted for demographics and ADLs/IADLs.

Results

Table 1: Participant Characteristics (Year 1)

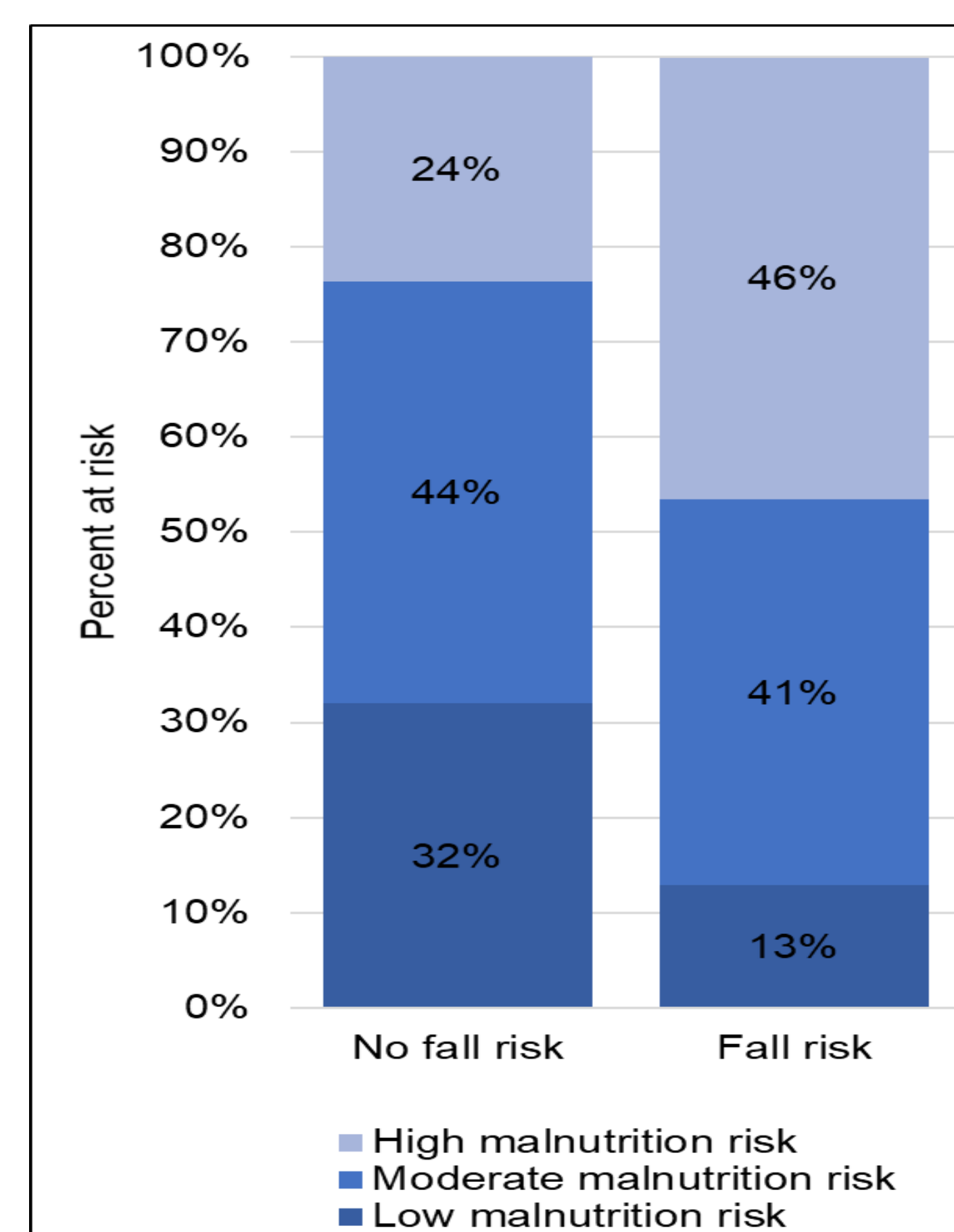
Variable	Mean (SD) or N (%) N=3,300
Age (years)	79.7 (8.4)
Sex (Female)	2,465 (74.7%)
Residence	
Urban	1,095 (36.7%)
Large rural	614 (20.6%)
Small and isolated rural	1,277 (42.8%)
Fall risk	1,940 (59.8%)
Fall in the last year	1,237 (39.8%)
Nutrition risk	
Low	638 (20.6%)
Moderate	1,305 (42.1%)
High	1,154 (37.3%)
Independent with ADLs	2,327 (70.5%)
Independent with IADLs	1,410 (42.7%)

Table 2: Logistic regression of associated factors with an incident fall after one year

Characteristics	Model 1 N=1,777		Model 2* N=1,094	
	OR (95% CI)	p	OR (95% CI)	p
Age	1.0 (0.9-1.01)	0.7	1.01 (1.0-1.1)	0.1
Sex	1.0 (0.8-1.2)	0.8	1.0 (0.7-1.3)	0.8
Dependent with ADL	1.1 (0.9-1.4)	0.7	1.1 (0.8-1.5)	0.7
Dependent with IADL	1.0(0.8-1.2)	0.6	1.1 (0.8-1.5)	0.6
Fall Risk	2.2 (1.8-2.8)	0.001	1.6 (1.2-2.2)	0.001
Nutrition Risk				
Low	1.0		1.0	
Moderate	1.0 (0.8-1.3)	0.1	1.1 (0.8-1.6)	0.6
High	1.7 (1.2-2.2)	0.001	1.7 (1.1-2.4)	0.01
Residence				
Urban	1.0		1.0	
Large rural	1.2 (0.9-1.6)	0.2	1.2 (0.8-1.7)	0.4
Small rural	1.2 (0.9-1.5)	0.1	1.1 (0.8-1.4)	0.7

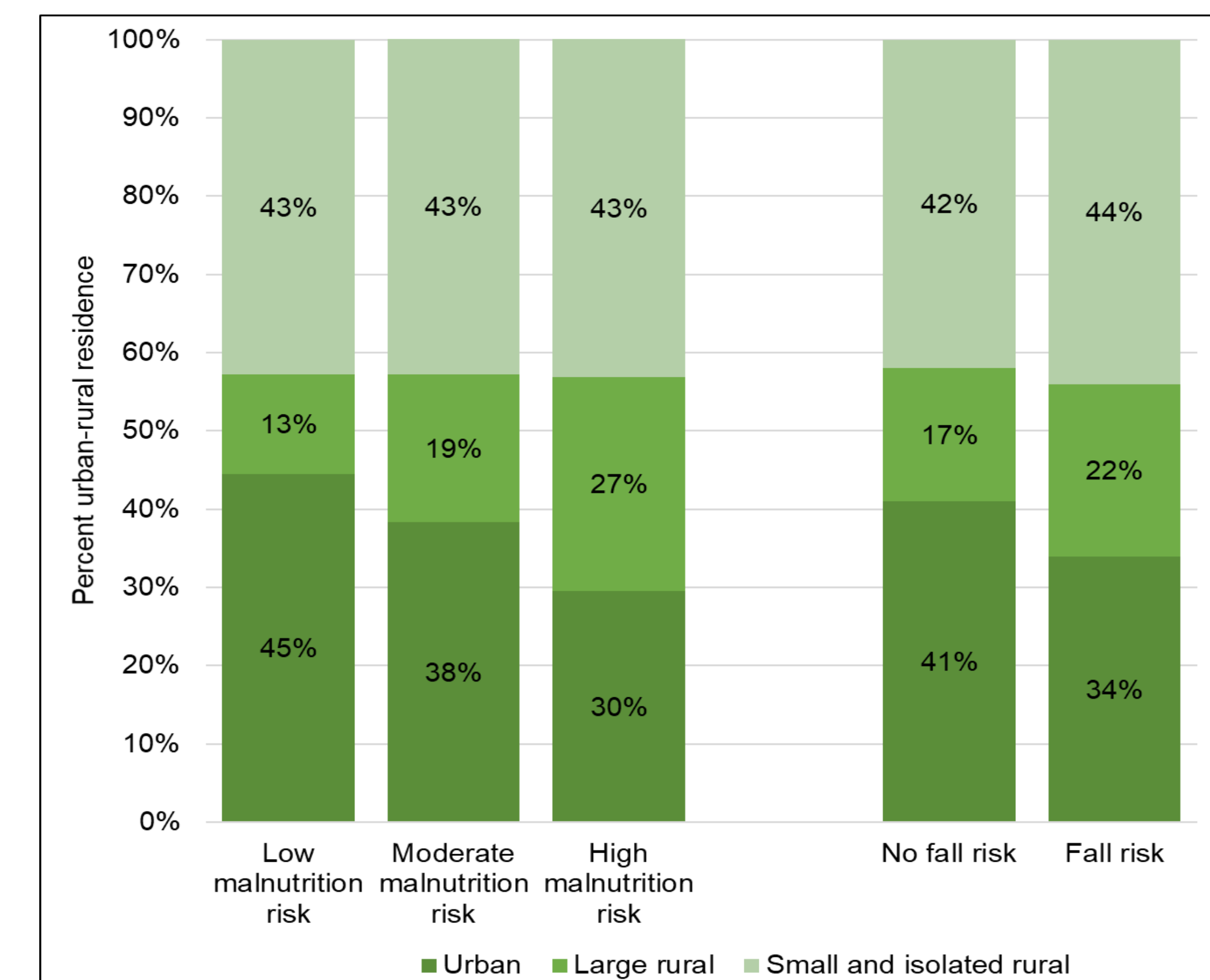
*Sub-population of participants who reported no fall in the past year on the Year 1 health risk assessment

Figure 1. Nutrition Risk by Fall Risk among Older Adults Receiving Supportive Home Services



P<0.001

Figure 2. Nutrition and Fall Risk by Urban-Rural Residence among Older Adults Receiving Supportive Home Services



P<0.001