

Supplementary data

Supplemental Table 1. HRS wave serving as data source for baseline, first follow-up, and second follow-up.

Baseline, n (% of total)	5,974 (100%)
2008	4,603 (77.1%)
2010	8 (0.1%)
2012	1,363 (22.8%)
First Follow-up, n (% of total)	5,974 (100%)
2012	4,299 (72.0%)
2016	1,675 (28.0%)
Participants with a single follow-up only, n (% of total)	3,269 (54.7%)
Second Follow-Up, n (% of total)	2,705 (44.6%)
2016	2,705 (100%)

Notes: Data source: Health and Retirement Study, 2006-2016.

Supplemental Table 2. Lagged association of loneliness as a time-varying predictor of depression and the symptom cluster, excluding “lonely” question from CES-D as a sensitivity analysis (n=5,969)

Outcome	Model 1 ^a			Model 2 ^b		
	OR (95% CI)	<i>p</i>	QIC	OR (95% CI)	<i>p</i>	QIC
Symptom Cluster	2.69 (2.18, 3.33)	**	2033.69	2.23 (1.77, 2.80)	**	1889.39
	Model 3 ^a			Model 4 ^b		
Depression	2.54 (2.22, 2.92)	**	4737.98	2.29 (1.97, 2.65)	**	4498.73

Notes: Data source: Health and Retirement Study, 2006-2016.

Generalized estimating equations (GEE) logistic regression was used for all models. The comparison was the absence of the dependent variable (depression or symptom cluster excluding the “lonely” question). QIC: quasi-likelihood under the independence model criterion.

^a Models 1 and 3 include time-varying loneliness at previous wave (s) as the primary predictor of outcomes, adjusting for follow-up time in years and the presence of the outcome variable at baseline.

^b Models 2 and 3 include time-varying loneliness at previous wave (s) as the primary predictor of outcomes, adjusting for follow-up time in years, the presence of the outcome variable at baseline, and baseline sociodemographic covariates (age, sex, race/ethnicity, education, total wealth in quartiles, living arrangement and total number of comorbidities)

***p* < .0001