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Disability trends and trajectories

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The National Academies of
SCIENCES · ENGINEERING · MEDICINE

Committee on Population

Workshop on Health and Disability among Working-Age Adults: Trends, Disparities, and Implications for Employment and Federal Programs

October 15-16th, 2024
Keck Rm. 100, 500 5th St. NW
Washington DC 20001

(1) describe recent trends in Disability (e.g., ADLs)

(2) Show results on functional limitations among adults aged 50-70 focusing on the likelihood of developing and recovering from each limitation, by race/ethnicity and nativity status

Disability trends

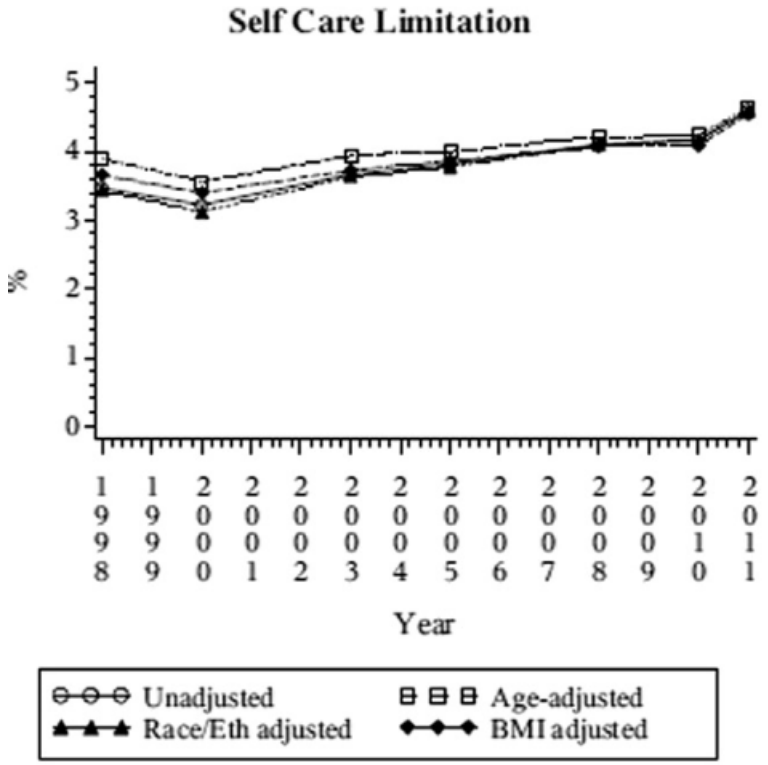
Disability: Activities of daily living (bathing, toileting, etc), Instrumental activities of daily living

- **Declining prevalence of older adults with activity limitations 1980s and 1990s** (Friedman et al. 2004, Wolf et al. 2005)
- **Some studies indicate an increase in the prevalence of disability (ADLS) across the U.S. population among older adults in the early 2000s** (Crimmins & Beltran-Sanchez 2011,Friedman & Spillman 2021)

  --2011 National Health and Aging Trends Study
- **Younger adults (18-44) too** (Zajacova & Margolis 2024)

Time trends in ADL limitations, pop aged 18+

- Self-care limitation: difficulty with any component of activities of daily living (ADLs) or instrumental ADLs (IADLs)



NHIS 1998-2011

Iezzoni et al 2014. Trends in U.S. adult chronic disability rates over time. *Dis & Health J 7(4)*

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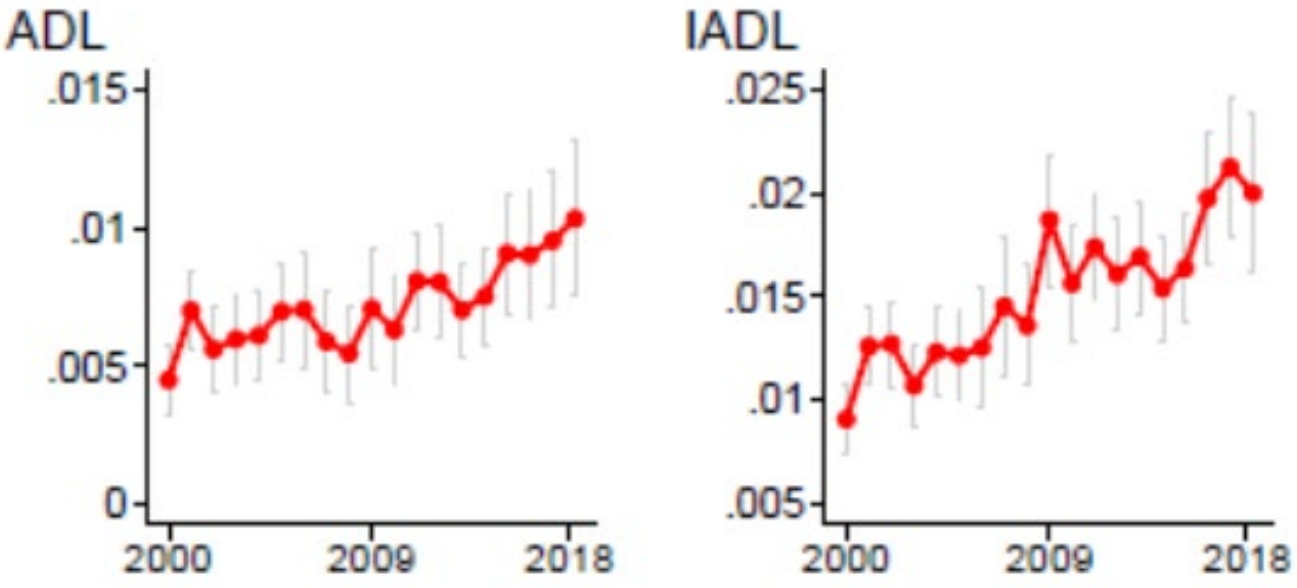
Time trends among young adults (18-44)



NHIS 2000-2018

Zajacova & Margolis 2024. Trends in Disability and Limitations among U.S. Adults Age 18-44, 2000-2018. *Ame J Epi 7(4)*

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Likelihood of developing and recovering from a functional limitation

Abarca, Pebley, Beltrán-Sánchez, Goldman

Health and Retirement Study: 1998-2018

Functional lim are necessary but not sufficient precursors for disability (Verbrugge 1994)

Goals, people aged 50-70

1) **Describe the dynamics of movement into and out of physical functional statuses – and factors associated with these changes -- among older men and women in the US by race, ethnicity, and nativity.**

2) **Understand the processes leading to differentials in the prevalence of functional limitations by examining which factors are associated with both developing and recovering from functional limitations.**

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Likelihood of developing and recovering from a functional limitation

Abarca, Pebley, Beltrán-Sánchez, Goldman

Health and Retirement Study: 1998-2018

Functional limitations

(1) walking one block

(2) getting up from a chair after sitting for a long period

(3) lifting or carrying 10lbs., and

(4) reaching or extending arms above shoulder level

Combine race, ethnicity, and nativity into 5 groups

(1) US-born Latino, (2) foreign-born Latino,

(3) US-born White, (4) US-born Black, and

(5) US-born other race/ethnicity

Likelihood of developing and recovering from a functional limitation

Study design: 11 waves of data

- compare changes in functional status from one wave (t_1) to the next wave (t_2) for each of the four physical functions examined
- we examine change in a specific functional limitation over the two-year period between two HRS waves t_1 and t_2
- Exclude cases if a wave (i.e., t_1) was not followed by another interview in the next round (t_2), two years after the first either because a respondent was not interviewed in that wave or because they died

Analytic sample

- Pairs of consecutive waves for all the waves in which a particularly respondent participated which allow us to look at development and recovery between waves

Likelihood of developing and recovering from a functional limitation

Health and Retirement Study: 1998-2018

Methods

Estimate separate mixed-effects binomial regression models for the development of functional limitations and for recovery from them including a person-level random effect.

Basic idea, estimate

(1) the likelihood of developing a functional limitation by t_2, given that the respondent does not have this limitation at t_1 and

(2) the likelihood of recovering from a functional limitation by t_2, given that the respondent has the limitation at t_1

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Likelihood of developing and recovering from a functional limitation

Health and Retirement Study: 1998-2018

	Whether or not develops an FL	
Type of functional limitation	% of Wave-Pairs without this FL at t1	% of Wave-Pairs without this FL at t1 who develop it by t2
Walking	89.0%	6.2%
Standing	94.2%	3.6%
Lifting	79.5%	10.1%
Reaching	84.7%	8.7%

Total Number of Wave-Pairs=107,707 from a Total of 25,252 Respondents

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Likelihood of developing and recovering from a functional limitation

Health and Retirement Study: 1998-2018

Type of functional limitation	Whether or not develops an FL: % of Wave-Pairs without this FL at t1	Whether or not develops an FL: % of Wave-Pairs without this FL at t1 who develop it by t2	Whether or not recovers from an FL: % of Wave-Pairs with this FL at t1	Whether or not recovers from an FL: % of Wave-Pairs with this FL at t1 who don't have it at t2
Walking	89.0%	6.2%	11.0%	34.6%
Standing	94.2%	3.6%	5.8%	50.5%
Lifting	79.5%	10.1%	20.5%	32.3%
Reaching	84.7%	8.7%	15.3%	43.0%

Total Number of Wave-Pairs=107,707 from a Total of 25,252 Respondents

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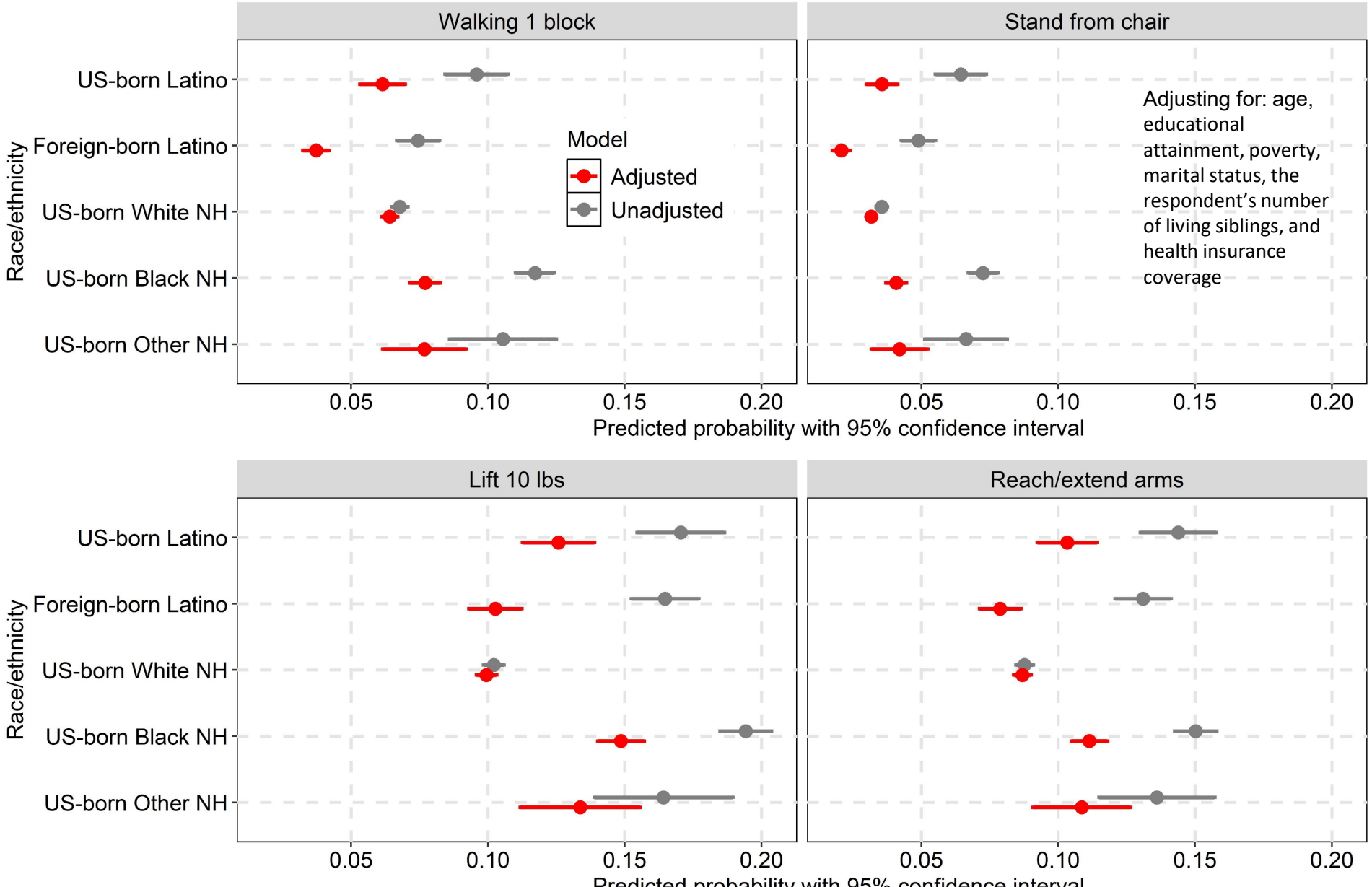
Prob of developing a functional lim



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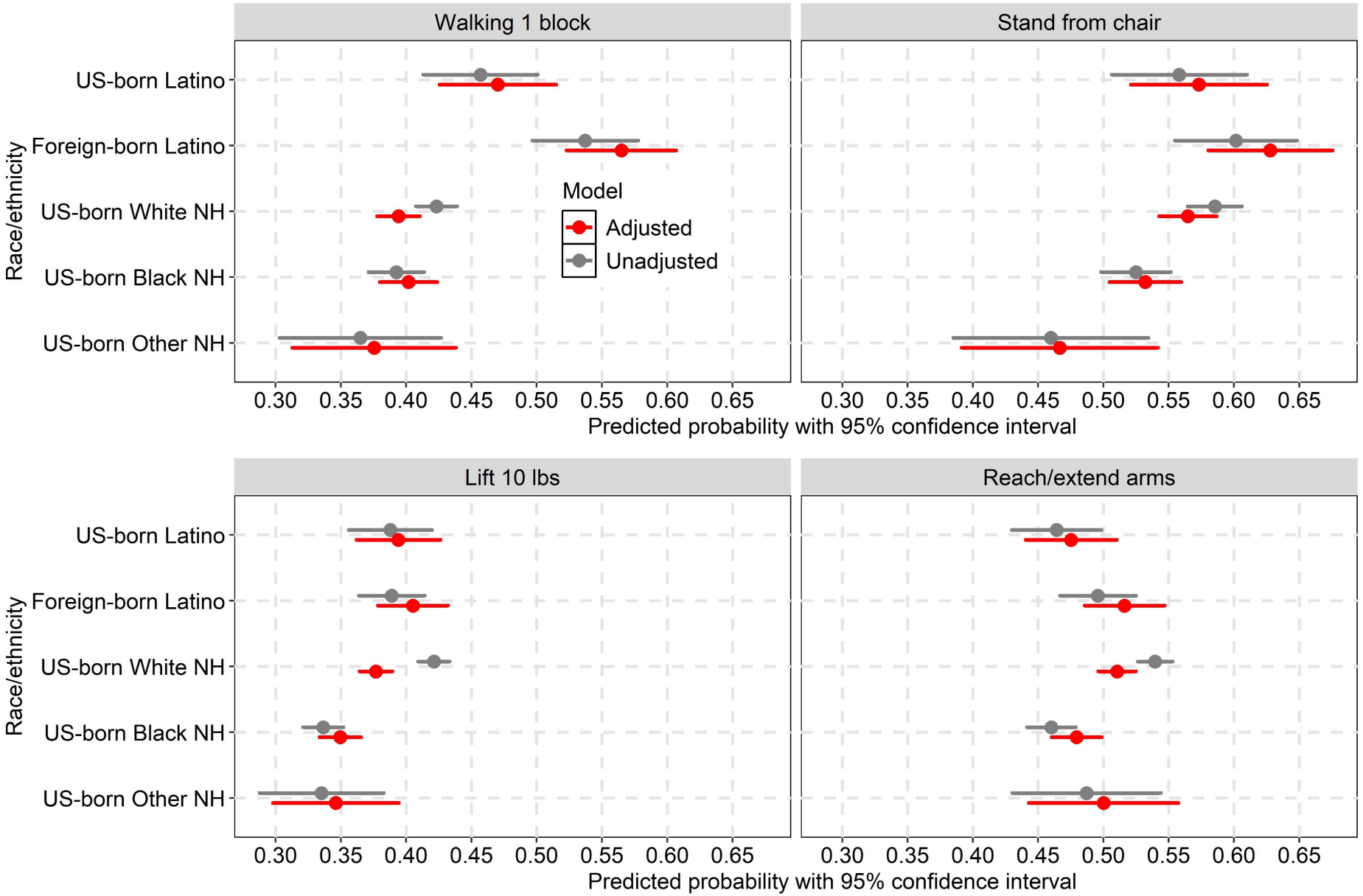
Prob of recovering from a functional lim



Conclusions

Differentials in development and recovery from limitations by race, ethnicity, and nativity (REN) declined substantially when social variables and general health status were held constant (adjusted models)

Foreign-born Latinos were less likely to develop, and more likely to recover from, limitations compared to other REN groups

Black respondents and those in the "Other" REN group, in general, were more likely to develop and less likely to recover from physical functional limitations.

Conclusions

Higher probabilities of *developing* a limitation are strongly and significantly associated with:

being female, older age, lower educational attainment, having health insurance (Medicare, Medical, or VA) insurance, being separated or divorced

Higher probabilities of *recovery* from limitations are significantly associated with:

higher educational attainment, being male (for standing and lifting), not being separated or divorced (for lifting and reaching), and having employer-based insurance (for most limitations).

Treating functional limitation as an "absorbing state" is likely to substantially over estimate the amount of time older adults spend functionally limited.

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Thank you

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