



Health Status Changes with Transitory Disability Over Time

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Myers, A., Ward, B., Wong, J., & Ravesloot, C. (2020). Health status changes with transitory disability over time. *Social Science & Medicine*, 244, 112647.

1

2 DISABILITY AS A DEMOGRAPHIC

- “Disability” has many meanings
 - Body function, interaction with environment, social identity, demographic group
- “Disability” as a population experiencing health disparities
 - Drum et al., 2005
 - Reichard et al., 2011
 - Krahn et al., 2015
- National surveys provide important information about people with disabilities
 - Prevalence, health, and characteristics – who are they, where are they?
 - Guide policy and program development



2

3 DISABILITY IS DIFFICULT TO MEASURE

- Disability is dynamic
 - Environmental features (e.g., curbs, steps)
 - Social support (e.g., family, friends)
 - Economic resources (e.g., healthcare costs, assistive devices)
- Different conceptual approaches
 - Health conditions (e.g., spinal cord injury) – NHIS
 - Impact of condition (e.g., difficulty walking) – ACS
 - Employment (e.g., ability to work) – SIPP
 - Community participation (e.g., social roles) – WHO-ICF
- Estimated U.S. disability rate varies considerably
 - 12.1% (Erickson, Lee & von Schrader, 2010) – ACS
 - 29.5% (Altman & Bernstein, 2008) – NHIS



3

4 EFFORTS TOWARD A COMMON MEASURE

- Healthy People 2010
- Washington Group on Disability Statistics – Short Set
- Affordable Care Act (Section 4302)



4

5 THE SIX-QUESTION SET: A GOLD STANDARD?

- HHS chose the six-question set from the ACS
 - Emerging as standardized measure
- Proxy measure of disability
 - Measure of functional and occupational capacity
 - Meant to identify long-term disability -- no measure of severity or longevity
- Data often interpreted with this “long-term” assumption
 - Stevens et al. 2016 – MMWR report
 - Myers & Ravesloot 2016 – Transportation and Time Use



5

6 THE SIX-QUESTION SET

1. **Walking difficulty:** Do you have serious difficulty walking or climbing stairs?
2. **Dressing difficulty:** Do you have difficulty bathing or dressing?
3. **Errands difficulty:** Because of a physical, mental, or emotional problem, do you have difficulty doing errands alone such as visiting a doctor's office or shopping?
4. **Remembering difficulty:** Because of a physical, mental, or emotional problem, do you have difficulty remembering, concentrating, or making decisions?
5. **Seeing difficulty:** Are you blind or have serious difficulty seeing, even when wearing glasses?
6. **Hearing difficulty:** Are you deaf or have serious difficulty hearing?



6

DO PRIOR RESPONSES PREDICT FUTURE RESPONSES?

Variance⁷ in responses to each disability question over one year

	Walking	Dressing	Errands	Remembering	Seeing	Hearing
R²	0.48	0.53	0.38	0.29	0.24	0.39
1-R² (unaccounted variance)	0.52	0.47	0.62	0.71	0.76	0.61

7

~2/3 OF CPS RESPONDENTS CHANGED DISABILITY STATUS (N = 721,178)

8

	Walking	Dressing	Errands	Remembering	Seeing	Hearing	Any
Ever Yes (of All)	11%	3%	6%	5%	3%	6%	17%
No → Yes (of Ever)	30%	39%	36%	35%	34%	31%	26%
Yes → No (of Ever)	31%	34%	31%	37%	44%	38%	30%
Yes → Yes (of Ever)	39%	27%	33%	28%	22%	31%	44%

Ward, B., Myers, A., Wong, J., & Ravesloot, C. (2017). Disability items from the current population survey (2008–2015) and permanent versus temporary disability status. *American Journal of Public Health, 107*(5), 706-708.

8

TWO DISTINCT POPULATIONS...? EX: WALKING DIFFICULTY (N = 79,329)

9

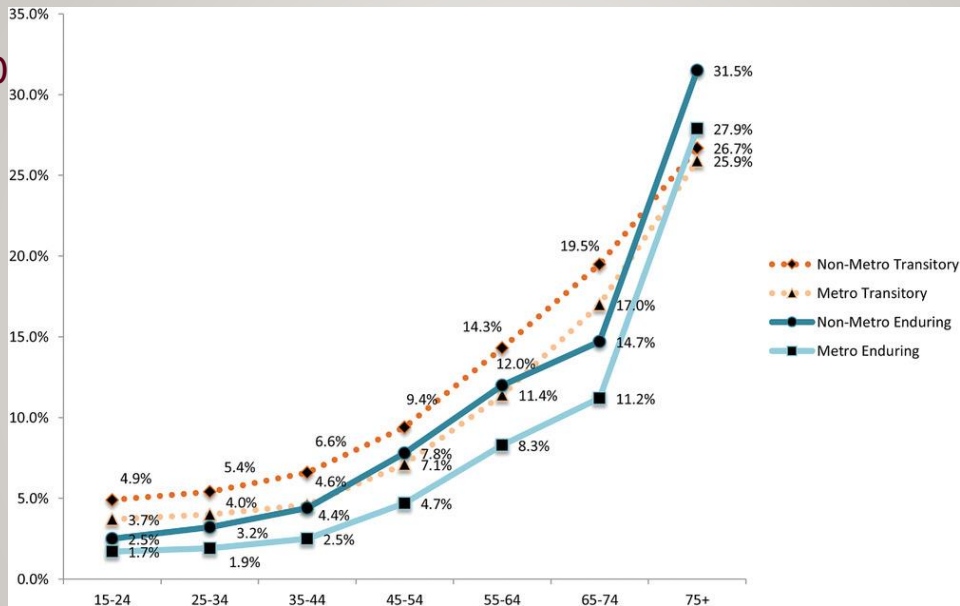
	Enduring	Transitory
Aged 65+	56%	52%
Gender (Female)	61%	58%
Married	40%	48%
College Education	14%	16%
Out of Labor Force	92%	79%

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9

ENDURING & TRANSITORY DISABILITY BY AGE AND GEOGRAPHY (CPS...)

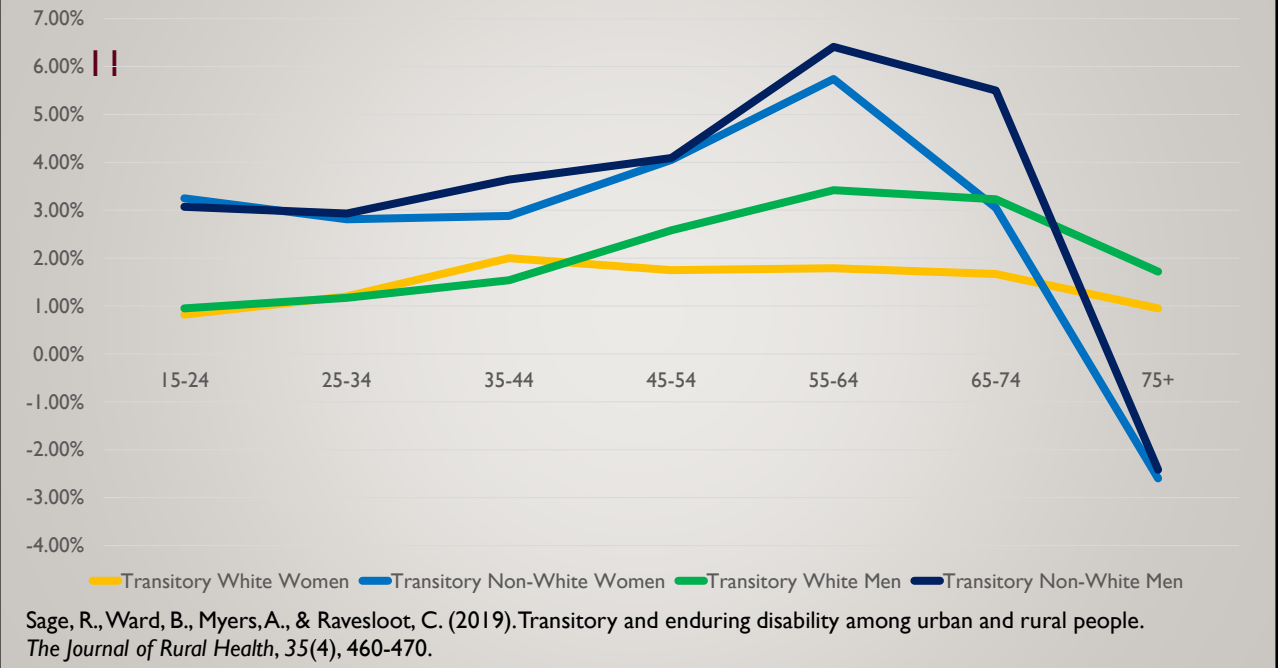
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Sage, R., Ward, B., Myers, A., & Ravesloot, C. (2019). Transitory and enduring disability among urban and rural people. *The Journal of Rural Health, 35*(4), 460-470.

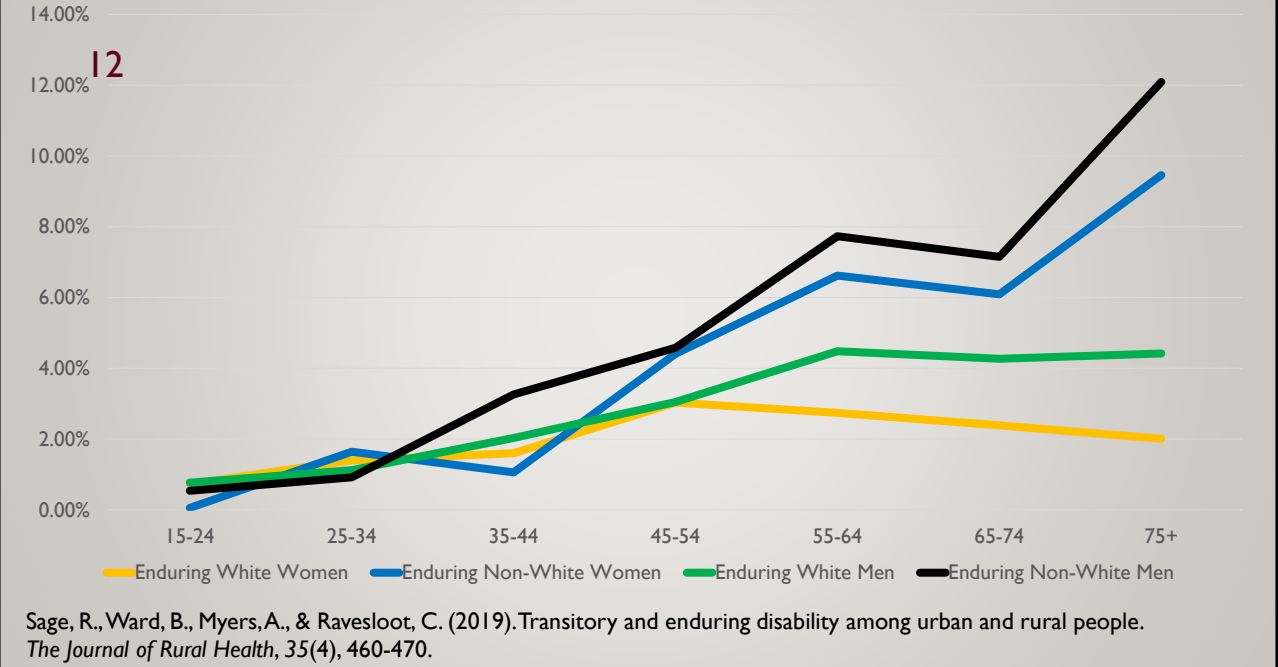
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TRANSITORY DISABILITY BY RACE & GENDER (CPS CONTINUED...)



11

ENDURING DISABILITY BY RACE & GENDER (CPS CONTINUED...)



12

13 DOES HEALTH CHANGE WITH DISABILITY?

- Longitudinal paper-pencil survey
 - Postcard to random 10k households in adjacent zip codes
 - “YES” to any of the six-question set
 - Four surveys approx. 4 months apart
 - 525 -- 488 -- 476 -- 460 (~12% attrition)



13

14 MEASURES

- Demographics (e.g., age, gender, race, education, income)
- Six-Question Set
- HRQOL Index – Yin et al., 2016
 - Overall health rating
 - Days of poor physical health
 - Days of poor mental health
 - Days that poor health limited activity
- Mobility Equipment Use
 - Walker, cane, crutch, wheelchair



14

Percentages of transitory disability between survey waves							
	Walking	Dressing	Errands	Remembering	Seeing	Hearing	Any
Wave 1 (525)	61%	26%	34%	29%	13%	28%	83%
Wave 2 (488)	50%	22%	32%	25%	11%	24%	74%
No → Yes	+5%	+5%	+8%	+7%	+3%	+2%	+3%
Yes → No	-15%	-9%	-10%	-12%	-4%	-6%	-14%
Wave 3 (476)	54%	19%	27%	24%	12%	27%	73%
No → Yes	+11%	+6%	+6%	+7%	+4%	+7%	+8%
Yes → No	-6%	-8%	-9%	-8%	-4%	-4%	-8%
Wave 4 (460)	49%	20%	27%	23%	9%	23%	71%
No → Yes	+5%	+7%	+7%	+7%	+2%	+3%	+7%
Yes → No	-11%	-5%	-6%	-7%	-4%	-6%	-9%

15

Percentages of enduring and transitory disability cumulatively							
	Walking	Dressing	Errands	Remembering	Seeing	Hearing	Any
Ever Yes (of All)	70% (of 522)	37% (of 523)	47% (of 523)	42% (of 523)	18% (of 523)	35% (of 523)	89% (of 523)
Enduring (of Ever)	54% (of 353)	32% (of 190)	37% (of 242)	30% (of 214)	34% (of 88)	55% (of 174)	67% (of 453)
Transitory (of Ever)	46% (of 353)	68% (of 190)	63% (of 242)	70% (of 214)	66% (of 88)	45% (of 174)	33% (of 453)
No → Yes (of Transitory)	16% (of 161)	22% (of 129)	23% (of 153)	21% (of 150)	9% (of 58)	18% (of 78)	11% (of 149)
Yes → No (of Transitory)	40% (of 161)	40% (of 129)	36% (of 153)	39% (of 150)	31% (of 58)	29% (of 78)	46% (of 149)
Both (of Transitory)	44% (of 161)	39% (of 129)	41% (of 153)	41% (of 150)	60% (of 58)	52% (of 78)	42% (of 149)

16

Change in HRQOL & Equip Use by Disability between waves

		HRQOL Index	Equipment Use
Walking Difficulty	Yes → No	0.27***	-0.08**
	No → Yes	-0.18*	0.14***
	Yes → Yes	0.01	0.03**
	No → No	0.05*	-0.01
Dressing Difficulty	Yes → No	0.38***	-0.04
	No → Yes	-0.14	0.11*
	Yes → Yes	-0.02	0.03
	No → No	0.03	0.00
Errands Difficulty	Yes → No	0.21*	-0.09**
	No → Yes	-0.15	0.06
	Yes → Yes	0.02	0.01
	No → No	0.04**	0.02*

17

18 LIMITATIONS

- Self-report data
- Small geographic area
- Community-level effects
- Survey context (e.g., design, content, weighting)
 - Lauer & Houtenville, 2018
- What is a “serious” difficulty?
- Survey specifically recruited people with disabilities
 - Over-represent transitions “out of disability”



18

19 SUMMARY

- Six-question set identifies enduring & transitory disability
 - Acute injury, progressive disability, interaction w/inaccessible environments
- Transitory changes are correlated with changes in health status
- Appear to reflect real change in disability and health status
- Addition of timeframe?
- Measuring disability at the population level is challenging. Distinguishing between enduring and transitory maybe be useful for research, policy, and service delivery.



19

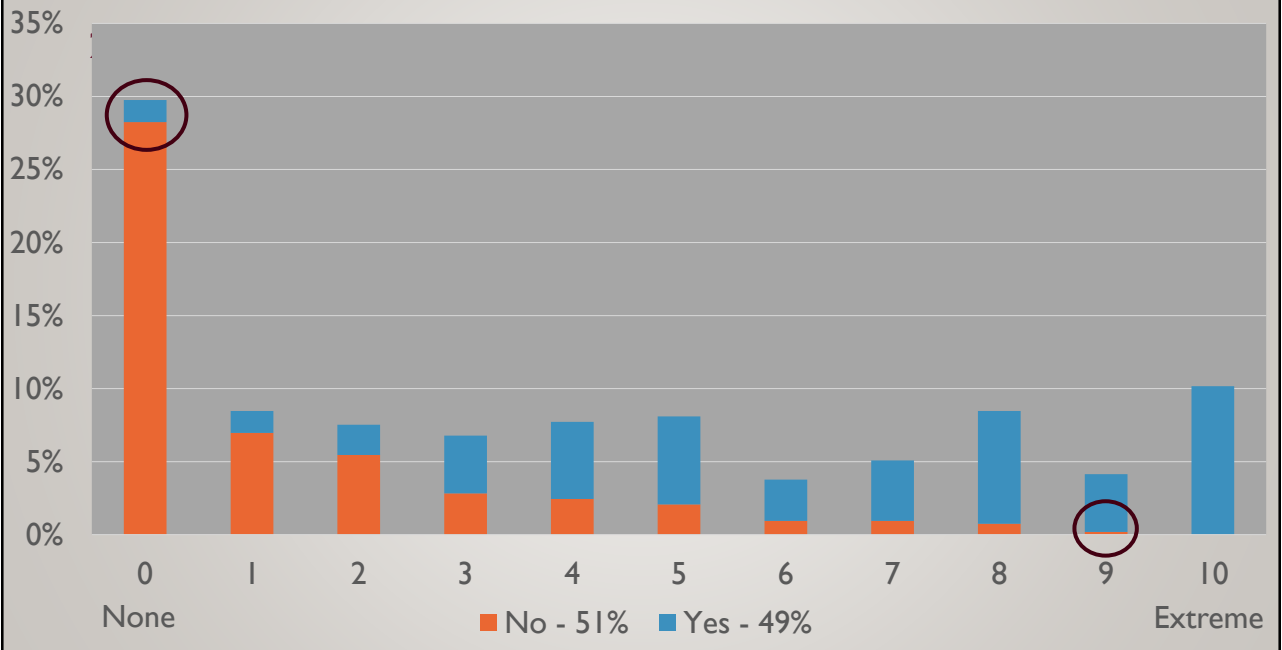
20 ONGOING WORK...

- A move toward the WGSS?
 - Adopted by the National Center for Health Statistics
 - Scaled response options
 - "...because of a HEALTH CONDITION"
- How do events across the lifespan predict disability over time?
- Compared binary vs. scaled version of six-question set



20

ONGOING WORK... BINARY VS. SCALED – WALKING DIFFICULTY (n = 274)



21

ONGOING WORK... BINARY VS. SCALED MEAN - CHANGE

	No → Yes	Always Yes	Yes → No
Walking	1.9 (3.8)	0.4 (2.8)	-2.9 (3.2)
Dressing	0.8 (1.4)	0.3 (3.5)	-2.1 (3.0)
Errands	1.6 (3.8)	0.2 (3.0)	-2.1 (2.8)
Remembering	1.1 (2.0)	0.3 (3.4)	-1.1 (3.1)
Seeing	2.0 (3.4)	-0.24 (2.4)	-0.8 (4.4)
Hearing	1.4 (2.9)	0.2 (2.7)	-1.5 (2.4)

22

23 POTENTIAL IMPLICATIONS

IF these findings represent distinct populations...

- Over-count of enduring (e.g., long-term) disability
- Under-count of transitory disability
- Disparities b/w no disability & enduring disability may be larger than reported
 - Less healthy
 - Less employed
 - More poverty
 - Probably spend more time at home, isolated... GREATER NEED FOR HCBS
- These groups may require different services and interventions



23

Thank You NARRTC!

\$250²⁴ donated to Summit IL's new building!



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24

25 FOR YOUR CONSIDERATION...

- How can we more accurately identify people with “disabilities” for demographic purposes?
- How do we maintain continuity of data as measurement approaches change?
- What role do (or should) disabled individuals have in disability measurement and data collection?



25



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32

26