

Mobility, Work & Assistive Technology

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National Institute on Disability and Rehabilitation Research

InfoUse

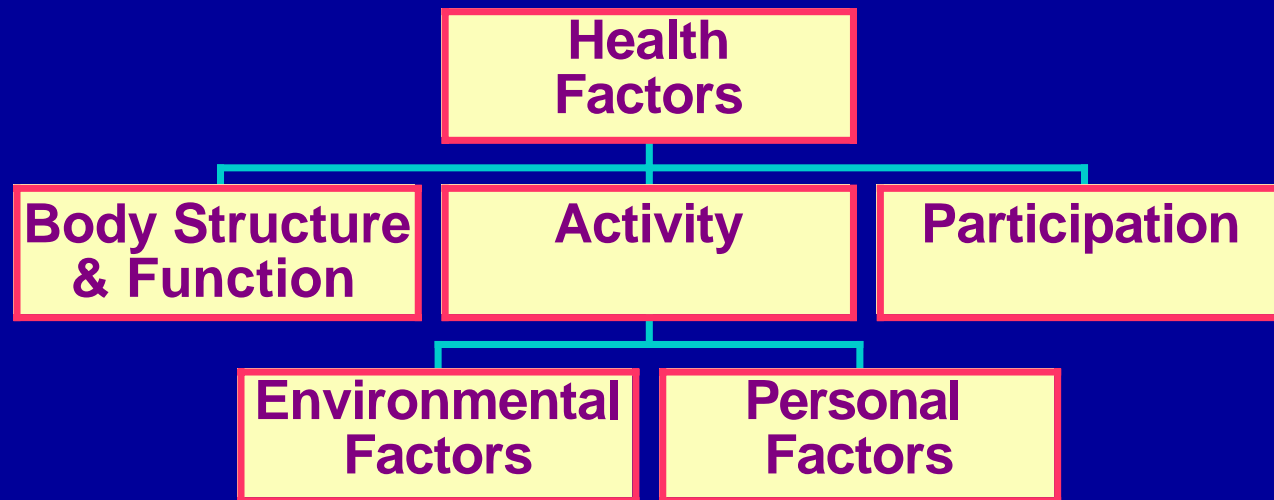
Purposes of study -1

- **Explore relationship between assistive technology (AT) use & labor force participation (LFP) among people with mobility limitations.**
 - **Aggregate 3 years of National Health Interview Survey (NHIS) data**
 - **Interpret findings using International Classification of Functioning Disability & Health (ICF)**

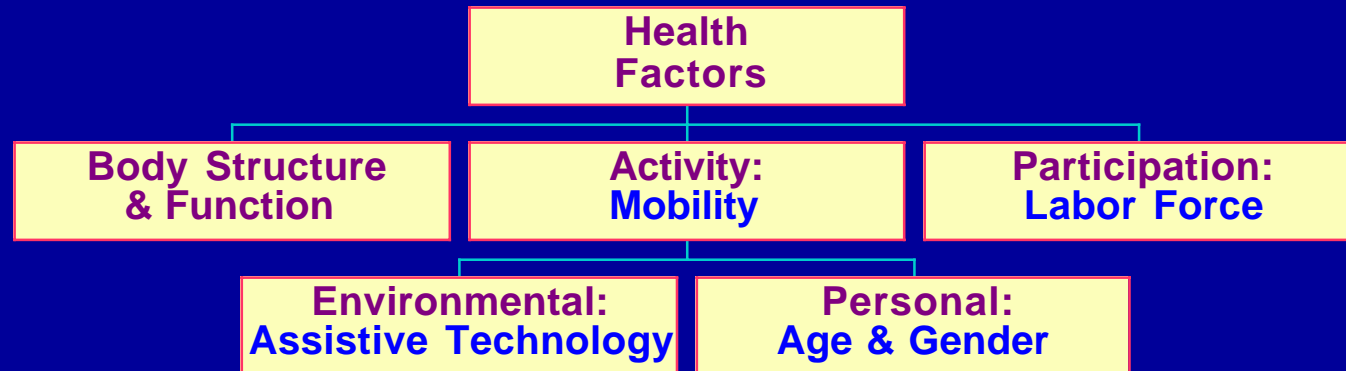
Purposes of study-2

- **Understand some characteristics and “behavior” of NHIS AT variable.**
- **Same AT question asked in all states on the Behavioral Risk Factor Surveillance Survey (BRFSS) core questionnaire 2001, and used as objective in Healthy People 2010.**

Schematic representation of ICF



Schematic representation of study variables



Source of data

- Pooled 3 years of NHIS data (1997, 1998, 1999)
- Sample: about 97,000 working-age adults (18-64 years)
- LFP, age, gender from family questionnaire
- Mobility limitation, assistive technology from sample adult questionnaire

Methods

- **Weighted and adjusted estimates were calculated using Stata 6.0.**
- **Descriptive statistics (cross tabs) predict AT Use and Labor Force Participation (LFP)**
- **Multivariate logistic regression was also used to predict LFP.**

Questions for mobility categories

- “By yourself and without using any special equipment, how difficult is it for you to....:
 - Walk 1/4 of a mile (about 3 city blocks)?
 - Walk up 10 steps without resting?
 - Stand or be on your feet for about 2 hours?
 - Is it not at all difficult (0), only a little difficult (1), somewhat difficult (2), very difficult (3), or can't you do it at all (4)?

Mobility severity categories

(summed across walk, climb stairs, stand)

Mobility Severity	Score range	Number in sample	Percent (weighted)
None or mild	0-3	73,462	93.09%
Moderate	4-9	4,668	5.19%
Severe	10-12	1,618	1.72%

Score range: 0=no difficulty walk, climb, stand

12=unable to walk, climb or stand

InfoUse

Labor force participation

- **In the labor force:**
 - Working at job or business for pay
 - Looking for work
 - Temporarily laid off
- **Reasons why not in labor force:**
 - Managing household
 - Going to school
 - Poor health
 - Disability
 - Retirement

Assistive technology question

- “Do you now have a health problem that requires you to use special equipment, such as a cane, a wheelchair, a special bed, or a special telephone?”
 - Yes = AT User
 - No = Nonuser

Importance of learning more about this AT variable

- **This is the single question about AT on the NHIS (apart from a question on hearing aids)**
- **Exact question used in all states on BRFSS, beginning 2001**
- **The NHIS and BRFSS AT question also used as an objective in Healthy People 2010**

These 1997-99 data compared to NHIS-D (1994-95)

Percent who use AT by age group and data source

	Ages		
	18-44	45-64	Total: 18-64
NHIS 97-99 (1 question)	1.52%	4.62%	2.58%
NHIS-D 94-95 (multiple Q's)	2.91%	7.09%	4.25%

As expected, mobility severity related to AT Use

Percent using AT, by mobility limitation, gender & age

	Mobility		
	None/ Mild	Moderate	Severe
Men			
18-44 years	0.9%	22.5%	70.3%
45-64 years	1.1%	24.5%	61.9%
Total: 18-64	1.0%	23.7%	64.3%
Women			
18-44 years	0.5%	9.8%	48.1%
45-64 years	0.9%	14.4%	52.2%
Total: 18-64	0.6%	12.5%	51.1%

No surprise: mobility severity negatively related to LFP

Percent in labor force, by mobility limitation, gender & age

	Mobility		
	None	Moderate	Severe
Men			
18-44 years	85.0%	55.9%	33.2%
45-64 years	81.2%	42.5%	22.7%
Total: 18-64	83.8%	47.6%	25.8%
Women			
18-44 years	73.4%	53.7%	35.1%
45-64 years	70.0%	43.3%	24.8%
Total: 18-64	72.3%	47.5%	27.5%

More surprising: AT use negatively related to LFP (men)

For men, percent in labor force, by AT use, mobility & age

No AT Use	Age	Mobility		
		None /Mild	Mod-erate	Severe
	18-44	85.1%	59.8%	29.4%
	45-64	81.3%	45.0%	27.8%
	18-64	83.9%	50.8%	28.2%
AT Use				
	18-44	79.7%	42.4%	34.8%
	45-64	77.2%	34.5%	19.5%
	18-64	78.8%	37.4%	24.4%

AT use also negatively related to LFP for women

For women, percent in labor force, by AT use, mobility & age

No AT Use	Age	Mobility		
		None /Mild	Mod-erate	Severe
	18-44	73.4%	54.3%	29.1%
	45-64	70.1%	45.2%	26.9%
	18-64	72.3%	49.0%	27.5%
AT Use				
	18-44	74.6%	47.8%	41.7%
	45-64	59.5%	32.6%	23.0%
	18-64	67.6%	37.4%	27.5%

Why might people who use AT have lower LFP?-1

- AT use might be functioning as a “severity” marker, even within the mobility severity categories.
- Among those with mobility limitations, people using AT may have other limitations (e.g. sensory)
- Additional analysis needed to answer those questions

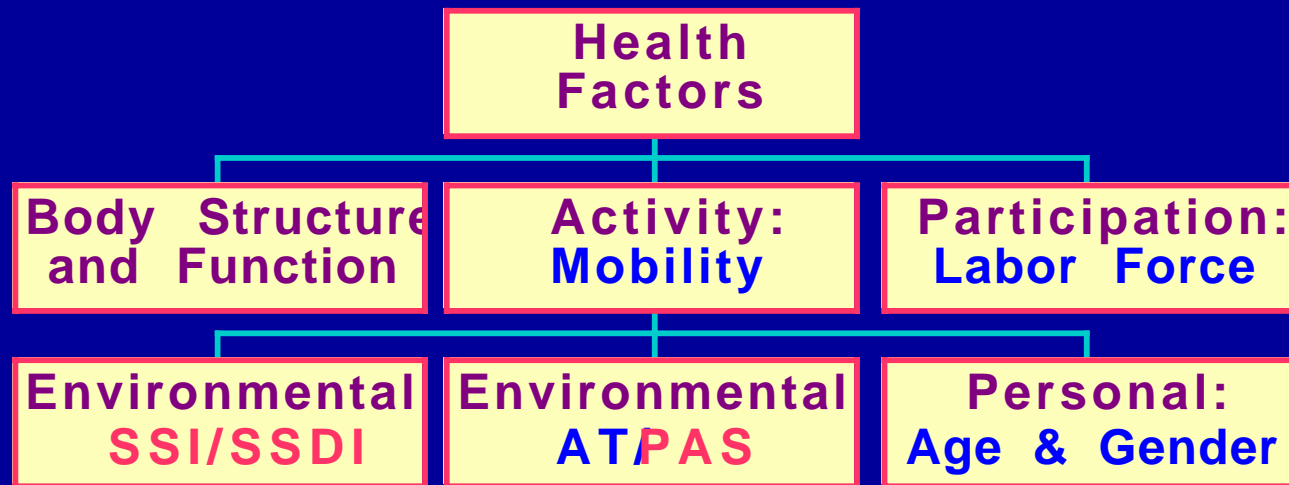
Why might people who use AT have lower LFP?-2

- **People whose condition “requires them to use AT” (the AT users in this survey) might not have access to the most appropriate AT that would facilitate their participation in work or other activities.**

Workplace accommodations not specifically measured in NHIS

- **Urban Institute found that 7% of non-workers with disabilities needed special equipment to facilitate working (NHIS-D)**
 - **Special office equipment**
 - **Braille, large print, special lighting**
 - **Voice synthesizer, TDD, other technical devices**

Of course, more complex ICF models include more variables



Complex model: AT/PAS related to higher LFP for some groups

- **Among people who received SSI/SSDI, odds of working are higher for those who also use AT and/or PAS**
- **Fits with Social Security Administration (SSA) finding: beneficiaries who received accommodations upon return to work rated AT and PAS as most helpful for job retention**

Summary

- **Power of aggregating data sets across years to study small samples**
- **Better understanding of properties of NHIS AT variable contributes to other analysis, including BRFSS & Healthy People 2010 objectives**
- **Utility of ICF for classifying variables, planning analysis, understanding results**

Directions for future research

- **Single NHIS AT question important and useful, but not sufficient for understanding AT impact**
- **Other surveys (in addition to NHIS) needed to investigate use of and need for specific AT & relationship to work and other social participation**
- **NHIS could be used to track changes in AT over time if a useful, short set of AT questions developed.**