

Health and Work Capacity of Older Adults: Estimates and Implications for Social Security Policy

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1. American Social Security Policy & Retirement Age

- Collect benefits after retirement
- The earliest age at which (reduced) benefits are payable is 62
- Full retirement benefits depend on a retiree's year of birth*

*Source: [https://en.wikipedia.org/wiki/Social_Security_\(United_States\)#Normal_retirement_age](https://en.wikipedia.org/wiki/Social_Security_(United_States)#Normal_retirement_age)

1. American Social Security Policy & Retirement Age

Year of birth	Normal retirement age
1937 and prior	65
1938	65 and 2 months
1939	65 and 4 months
1940	65 and 6 months
1941	65 and 8 months
1942	65 and 10 months
1943 to 1954	66
1955	66 and 2 months
1956	66 and 4 months
1957	66 and 6 months
1958	66 and 8 months
1959	66 and 10 months
1960 and later	67

Age when filing	Change in benefits from full amount ^[45]
62	-25%
63	-20%
64	-13.3%
65	-6.7%
66	----
67	+8%
68	+16%
69	+24%
70	+32%

Based on a normal retirement age of 66

*Source: [https://en.wikipedia.org/wiki/Social_Security_\(United_States\)#Normal_retirement_age](https://en.wikipedia.org/wiki/Social_Security_(United_States)#Normal_retirement_age)

2. Introduction

- Social Security and Medicare program face huge budget deficit
- Requires reform to bring future benefits and revenues
- Increase the age of early and normal retirement ([Munnell et al. 2004](#))

- But people with poor health will find the return to increased work more difficult
- Health varies systematically by socioeconomic group

2. Introduction

- Basic question:
 - If eligibility ages for public programs increase, would more people go to work, or would more people instead be out of work and classified as disabled?
 - If the latter, how does this vary by demographic group?
- My interpretation:
 - If there is a policy that people **need to work longer** to collect full benefits after retirement, do they have **enough health** to do that?

3. Literature Review

- Some points of consensus in this field:
 1. Health shocks do not explain retirement trends over time, partly because few individuals have truly poor health (Burkhauser, Couch and Phillips 1996; McGeary 2009; Mitchell and Phillips 2000; Smith 1999)
 2. Social Security policies cannot explain large declines in labor force participation through 1990, but changes in rules that make work relatively more favorable may have contributed to rising labor force participation in recent years (Blau and Goodstein 2010; Gustman and Steinmeier 1986; Gustman and Steinmeier 2005; Lumsdaine, James and David 1996; Lumsdaine, Stock and Wise 1994; Rust and Phelan 1997)

3. Literature Review

- Some points of consensus in this field:
 3. Health insurance benefits provided by employers also influence labor force participation, as does Medicare eligibility (Blau and Gilleskie 2008; Gustman and Steinmeier 1994; Lumsdaine, James and David 1996)

3. Literature Review

- Most relevant literature:
 - A study of older male workers in the Health and Retirement Study (HRS) describes characteristics of Social Security beneficiaries claiming early retirement ([Burkhauser, Couch and Phillips 1996](#)). In the HRS, early retirees were slightly more likely to be in poor health than non-early retirees, but only 3% of the early retirees reported poor health.
 - [McClellan \(1998\)](#) demonstrates that functional status, rather than a health condition, is an important determinant of retirement decisions.
 - [McGarry \(2004\)](#) uses the Health and Retirement Study to show that one's perception of health is an important determinant of retirement.

3. Literature Review

- The literature above
 - Understand **what people might do** in response to policy changes
 - In each case authors are forced to make strong assumptions regarding an individual's ability to borrow against future Social Security Benefits
 - Restrict empirical populations to narrow groups
- **Fail** to answer: what are the young retired **able** to do? → Ability

3. Literature Review

- This paper
 - Answer the question “What are the young retired **able** to do?”
 - Does not restrict study population
 - Focuses on **capacity**, not simulating expected behavior

4. Data

- Two sources:
 - MEPS: nationally representative household survey with an overlapping panel design
 - HRS: a panel study of adults age 50 and older
 - Both surveys ask questions about **health insurance, labor force participation, physical and mental health and functioning, demographics, disability status, and household characteristics.**

4. Data

- Difference between two sources:
 - MEPS:
 - 2000-2003
 - Asks detailed questions on impairments in activities of **daily living (ADLs)** and **instrumental activities of daily living (IADLs)**, as well as other **physical, cognitive, and social limitations**
 - Asks whether individuals have ever been diagnosed with certain health conditions such as **diabetes, heart conditions, stroke, or high blood pressure**

4. Data

- Difference between two sources:
 - MEPS:
 - Individuals were asked, "Do you currently have a job for pay or own a business?"
 - If the answer is no, respondents were asked, "What is the main reason you did not work since (START DATE)?"
 - Possible responses include: could not find work; retired; unable to work because ill/disabled; on temporary layoff; maternity/paternity leave; going to school; take care of home or family; wanted some time off; or waiting to start new job

4. Data

- Difference between two sources:
 - HRS:
 - Has a larger sample of older adults, with richer information on economic and household characteristics and the characteristics of one's spouse
 - Disadvantage: self-reported health is only characterized on a five-point scale: excellent, very good, good, fair, and poor

4. Data

- Difference between two sources:
 - HRS:
 - Question: "Are you working now, temporarily laid off, unemployed and looking for work, disabled and unable to work, retired, a homemaker, or what?"
 - Individuals who were working, laid off, unemployed, or "partially retired" are coded **"in the labor force"**
 - Individuals who described themselves as "retired" are coded as **"retired"**
 - Individuals self-reporting that they were disabled are included as **"disabled"**

4. Data

Table 1: Descriptive Statistics for Labor Force Status and Health

	MEPS, 2000-2003				HRS, 1994-2008			
	57-61	62-64	65-69	70-74	59-61	62-64	65-69	70-74
OUTCOMES								
<i>Labor force status</i>								
In labor force	0.69	0.51	0.32	0.17	0.64	0.49	0.35	0.21
Retired	0.22	0.41	0.63	0.78	0.26	0.41	0.59	0.75
Disabled	0.09	0.08	0.05	0.04	0.10	0.11	0.06	0.03
INDEPENDENT VARIABLES								
<i>Self-reported health</i>								
100-point scale	78 (19)	76 (19)	77 (18)	74 (19)	---	---	---	---
Excellent	---	---	---	---	0.16	0.14	0.13	0.11
Very good	---	---	---	---	0.33	0.33	0.32	0.31
Good	---	---	---	---	0.29	0.31	0.32	0.33
Fair	---	---	---	---	0.16	0.16	0.17	0.18
Poor	---	---	---	---	0.07	0.06	0.06	0.07
<i>Limitations</i>								
ADLs	0.02	0.02	0.03	0.04	0.11	0.11	0.11	0.12
IADLs	0.03	0.04	0.04	0.08	0.04	0.04	0.04	0.05
Vision impairment	0.07	0.07	0.08	0.09	---	---	---	---
Hearing impairment	0.12	0.11	0.15	0.19	---	---	---	---
Physical limitation	0.17	0.19	0.20	0.28	---	---	---	---
Cognitive limitation	0.04	0.05	0.04	0.07	---	---	---	---
Social limitation	0.06	0.07	0.06	0.08	---	---	---	---
1 Physical limitation	---	---	---	---	.177	0.18	0.19	0.19
>1 Physical limitation	---	---	---	---	.390	0.40	0.41	0.46
CES-D depression (0-8)	---	---	---	---	1.41	1.28	1.27	1.33

4. Data

Table A1: Descriptive Statistics for Demographic Variables

	MEPS, 2000-2003				HRS, 1994-2008			
	57-61	62-64	65-69	70-74	59-61	62-64	65-69	70-74
<i>Race/ethnicity (%)</i>								
White	84	83	84	85	86.3	87.2	88.3	89.6
Black	9.0	10	9.1	8.4	9.5	9.0	8.3	7.5
Hispanic	6.9	6.6	7.0	6.1	6.7	6.7	6.1	5.0
<i>Education (%)</i>								
Some college	48	43	38	35	48.6	44.2	42.8	38.9
<i>Marital status (%)</i>								
Married	78	78	74	67	69.0	67.8	67.0	63.4
Divorced/Separated	15	14	13	10	16.3	14.9	12.2	9.4
Widowed	3	4	5	24	7.4	10.1	14.1	21.8
Never married	5	6	4	3	3.8	3.7	3.5	3.1
<i>Census region (%)</i>								
Northeast	20	19	20	21	17.7	18.1	18.5	18.8
Midwest	22	26	23	23	25.2	25.1	24.8	26.8
South	37	36	39	36	38.0	37.0	36.3	33.9
West	21	19	18	20	19.1	19.9	20.4	20.6
<i>N</i>	4,601	2,266	3,257	2,985	12,852	12,012	15,395	12,418

5. Empirical Analysis - The Self-Reported Health Status

Table 1: Descriptive Statistics for Labor Force Status and Health

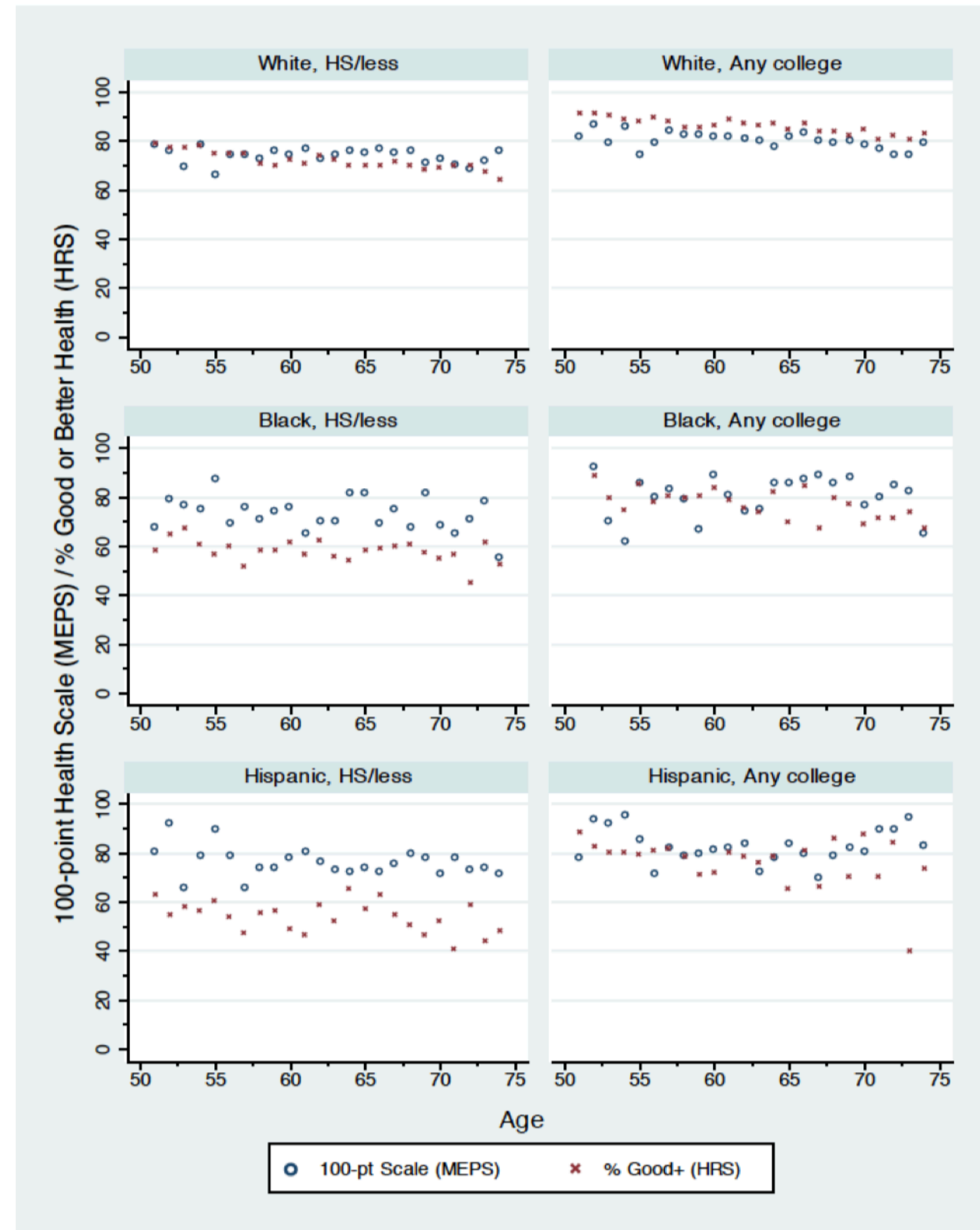
	MEPS, 2000-2003				HRS, 1994-2008			
	57-61	62-64	65-69	70-74	59-61	62-64	65-69	70-74
OUTCOMES								
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In labor force	0.69	0.51	0.32	0.17	0.64	0.49	0.35	0.21
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ADLs	0.02	0.02	0.03	0.04	0.11	0.11	0.11	0.12
IADLs	0.03	0.04	0.04	0.08	0.04	0.04	0.04	0.05
Vision impairment	0.07	0.07	0.08	0.09	---	---	---	---
Hearing impairment	0.12	0.11	0.15	0.19	---	---	---	---
Physical limitation	0.17	0.19	0.20	0.28	---	---	---	---
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>1 Physical limitation	---	---	---	---	.390	0.40	0.41	0.46
CES-D depression (0-8)	---	---	---	---	1.41	1.28	1.27	1.33

Overall, health appears to remain fairly constant through the sixties

As people enter their 70s, health starts to decline

Figure 1: Average Health Scale in the MEPS and HRS, Males

5. Empirical Analysis



Male

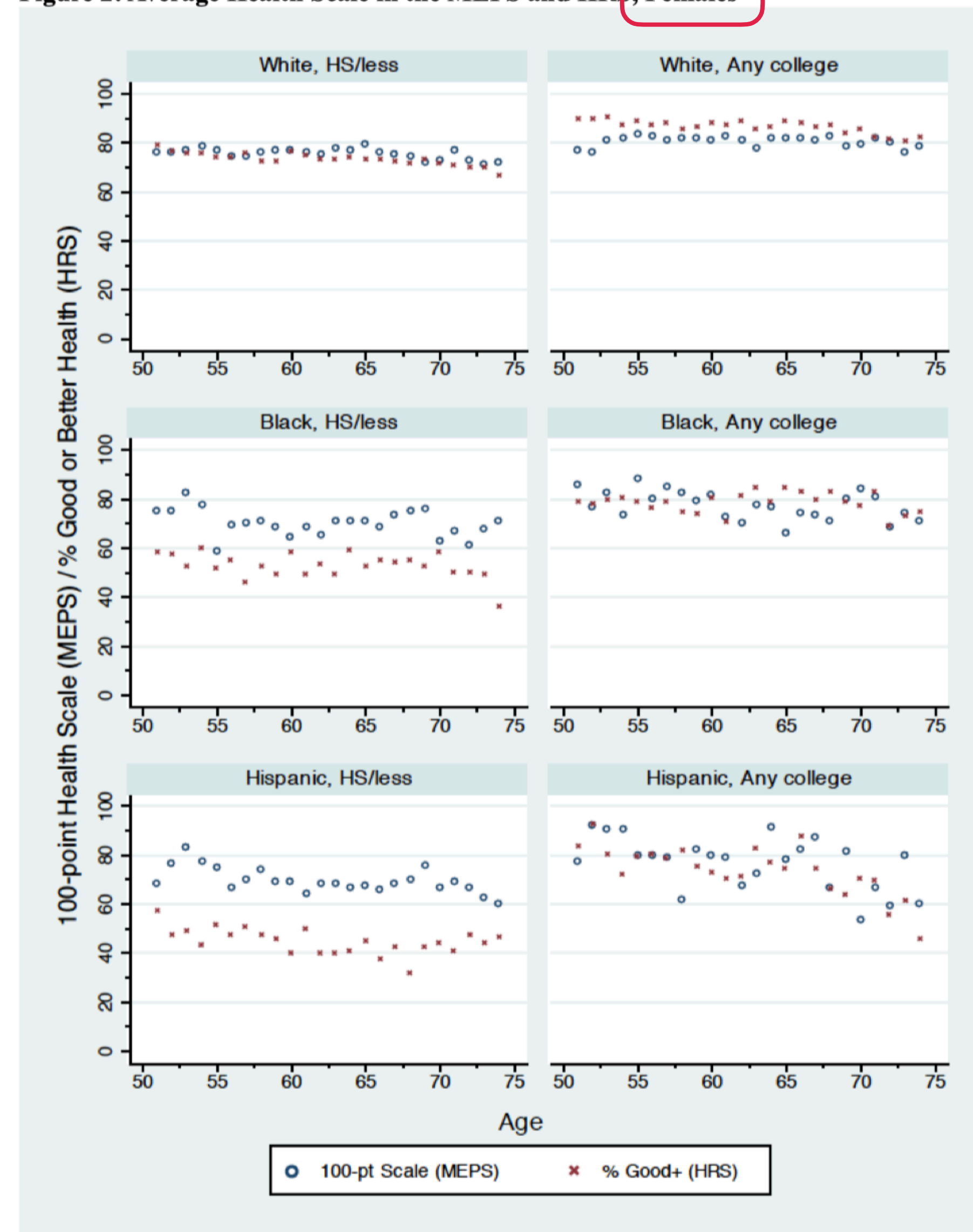
White v.s. Black&Hispanic

Better educated
v.s.
Less educated

The chart shows the average thermometer score by age and demographic group in the MEPS (age 55-84), and the share of people reporting good, very good, or excellent health in the HRS (age 55-74). All data are weighted to national totals.

5. Empirical Analysis

Figure 2: Average Health Scale in the MEPS and HRS, Females



Female

White v.s. Black&Hispanic

Better educated
v.s.
Less educated

The chart shows the average thermometer score by age and demographic group in the MEPS (age 55-84), and the share of people reporting good, very good, or excellent health in the HRS (age 55-74). All data are weighted to national totals.

5. Empirical Analysis - Estimating Work Capacity

- Labor force participation \leftrightarrow Health
 - A **hypothetical policy**: early eligibility age for Social Security benefits from 62 to 65; set the age of full Social Security benefits at age 70
 - In the MEPS sample, consider people aged **57-61**; With the larger HRS data, use people aged **59-61**
 - Model **labor force participation**, **retirement (R)**, and **disability (D)** using multinomial logit models
 - **Simulate** work capacity for those aged **62-64** (people facing a delay in eligibility for early retirement benefits under this policy)
 - **Compare** the simulated results with actual labor force participation

5. Empirical Analysis - Estimating Work Capacity

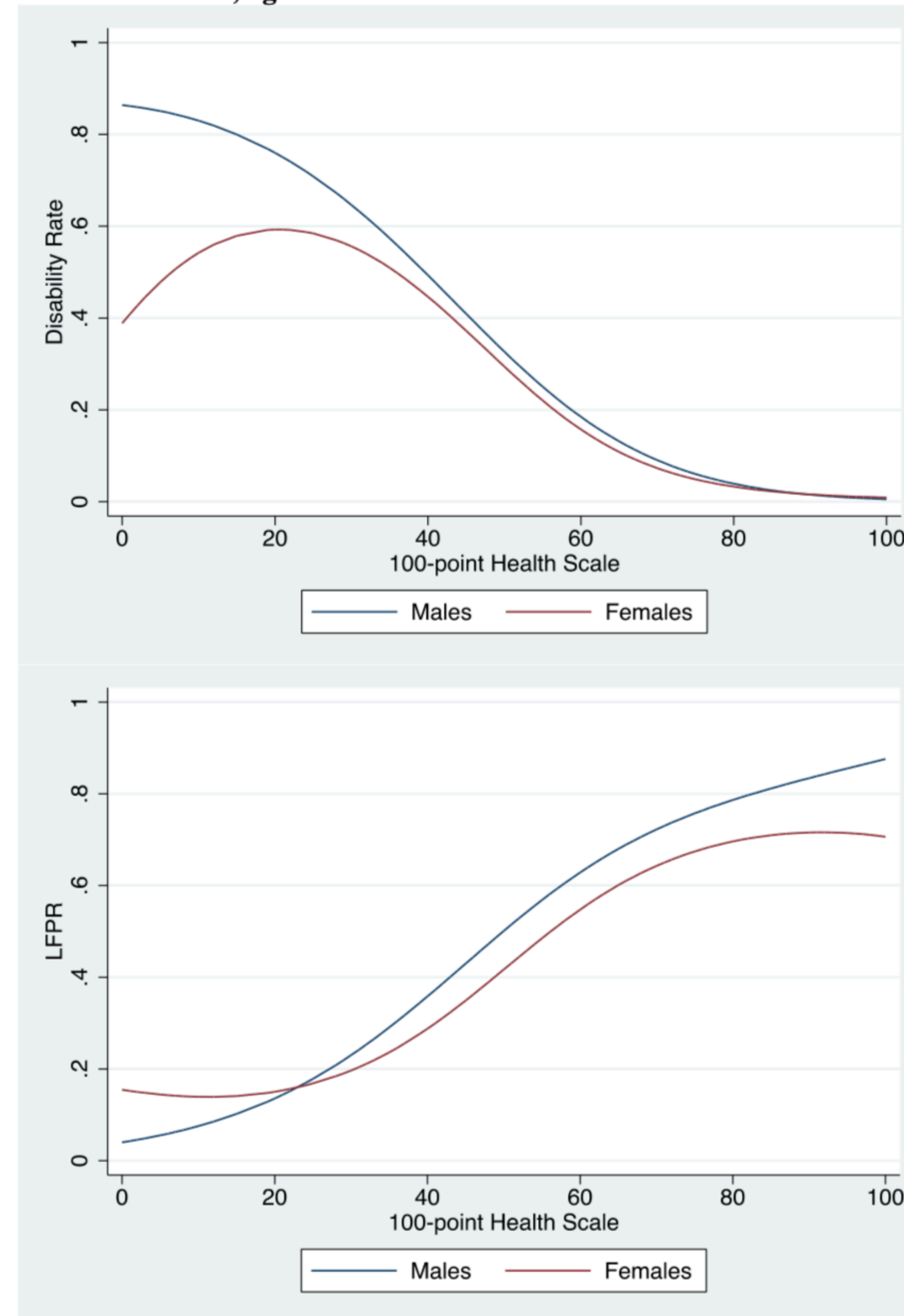
- Probability of disability:

$$(1) \quad Pr(Disabled)_i = \frac{\exp(x'_i \beta_D)}{1 + \exp(x'_i \beta_R) + \exp(x'_i \beta_D)}$$

- Key assumption:
 - Health conditions used in the models are similar for individuals 1 to 6 years apart in age. That is, reporting a health score of 80 means the same thing for a 64 year old as it does for a 59 year old

5. Empirical Analysis

Figure 3: Probability of Labor Force Participation and Disability by Health Status in the 2000-2003 MEPS, ages 57-61



MEPS

Nonlinear relationship

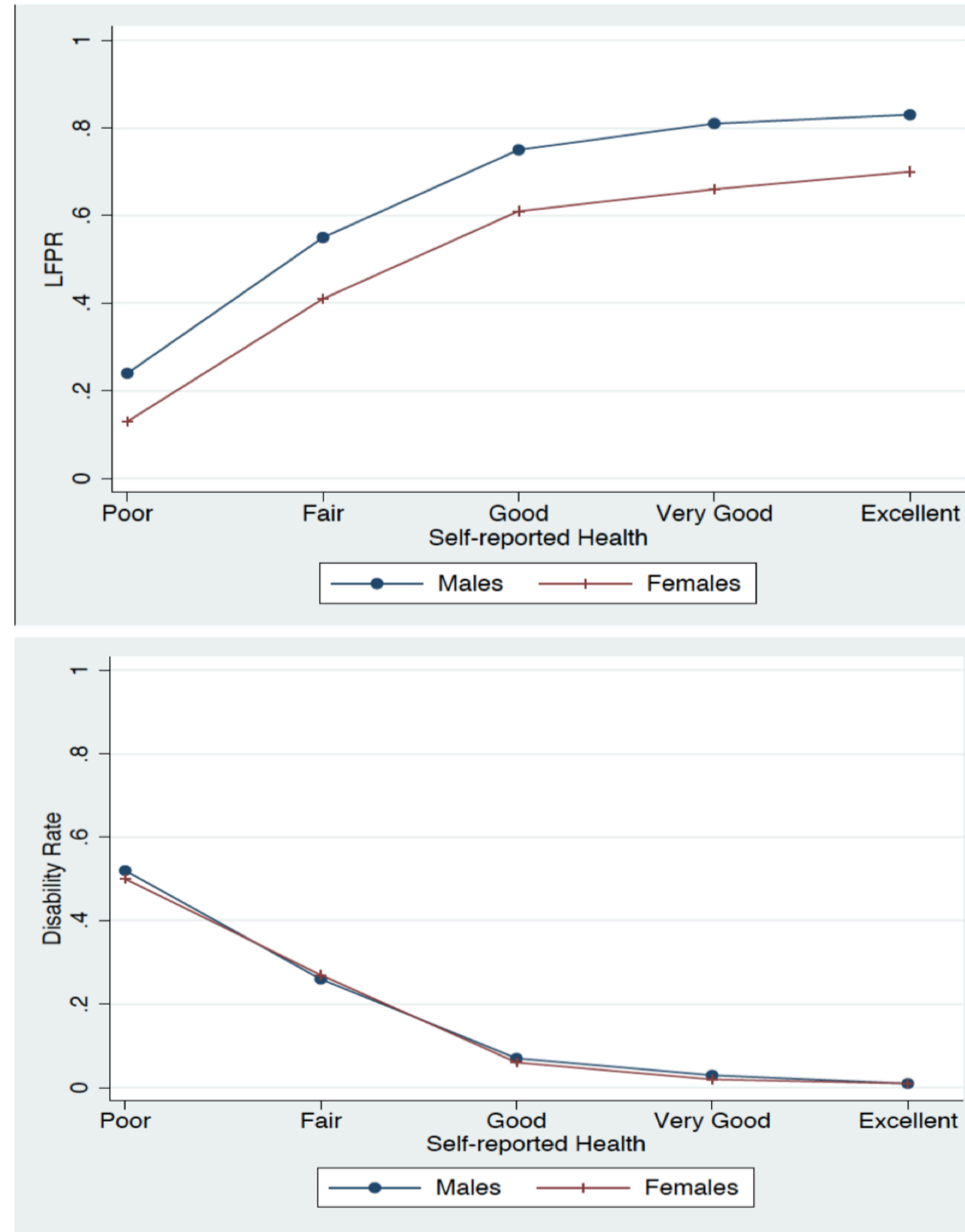
10% decline in health status
2-5% increase in disability

Participation is lower with
fair or poor health

The chart shows rates of disability and labor force participation by health status.

Figure 4: Probability of Labor Force Participation and Disability by Self-Reported Health Status in the HRS, ages 59-61

5. Empirical Analysis



HRS

Similar results

The chart shows rates of disability and labor force participation by health status.

5. Empirical Analysis

Table A2: Relative Risk Ratios for Labor Force Status in the 2000-2003 MEPS

Variable	Ages 57-61			
	Males		Females	
	Disabled	Retired	Disabled	Retired
100-point health scale (/10):				
-linear term	0.51***	0.90*	0.56***	0.93
-squared term	0.98	0.98	1.03	1.05**
-cubic term	1.00	0.99	1.01	1.00
ADLs/IADLs	6.24***	3.43**	1.64	1.95*
Vision Impairment	1.68	1.33	1.63*	0.99
Hearing Impairment	0.81	1.21	1.50	1.50*
Physical Lim.	2.53***	1.37	4.63***	1.42**
Cognitive lim.	1.69	0.85	2.05*	1.48
Social lim.	2.69**	2.79***	2.17**	1.64
Diabetes	1.02	0.61*	1.87**	1.63**
Asthma	1.63	1.29	0.93	1.01
High BP	0.92	0.98	1.44	1.09
Heart condition	2.17***	1.45*	1.23	0.79
Stroke	3.04**	1.07	2.02	1.31
Some college	0.42***	1.10	0.47***	0.76**
Black	1.53	1.26	0.86	0.84
Hispanic	0.92	0.87	0.96	1.43*
Divorced, separated or widowed	2.31***	1.02	1.03	0.30***
Never married	5.47***	1.59	4.17***	0.59
Metropolitan area	2.24***	1.06	0.82	1.00
N	2,129		2,472	

Risk ratios reflect multinomial logit models of reporting disability or retirement, relative to being in the labor force. Models include dummies for region. p-values: *p<.1; ** p<.05; *** p<.01

MEPS

100-point health scale strongly associate with self-reported disability

5. Empirical Analysis

Table A3: Relative Risk Ratios for Labor Force Status in the HRS

Variable	Ages 59-61			
	Males		Females	
	Disabled	Retired	Disabled	Retired
<i>Self-reported Health (Excellent is ref)</i>				
Very Good	1.99*	0.99	0.65	1.07
Good	2.44**	1.00	1.30	0.95
Fair	5.84***	1.17	3.18***	0.97
Poor	10.0***	2.61***	9.51***	2.35***
<i>Limitations in activity & function</i>				
<i>Physical functional limits</i>				
Exactly 1 limitation	2.51***	1.08	1.50	1.09
More than 1 limitation	6.07***	1.35**	5.80***	1.19*
Any ADL limitations	1.81***	1.21	2.16***	1.76***
Any IADL limitations	2.26***	1.40	1.88**	1.08
CES-D depression score (0-8)	0.95	0.96***	1.05	1.05**
<i>Conditions</i>				
Heart disease	2.12***	1.39***	1.80***	1.49
Lung disease	1.51**	0.82	1.21	1.07
Stroke	2.48**	1.94***	1.63	1.01
Psychiatric disorder	1.74**	0.97	1.79***	1.38
Cancer	0.96	1.03	1.09	1.20
Hypertension	1.52**	1.21*	0.77	1.00
Arthritis	1.34	1.00	1.13	1.13
Diabetes	0.85	1.07	1.54**	1.38
Back pain	1.00	1.09	1.12	0.93
<i>Risk factors</i>				
Underweight	0.98	2.44	0.68	1.17
Overweight	0.85	0.97	0.80	0.97
Obese	1.02	0.97	1.08	0.95
Former smoker	1.27	1.10	0.99	1.00
Current smoker	1.40	1.21	1.07	0.88
<i>Demographics</i>				
< High school degree	0.85	0.69**	1.31	1.34**
Some college	0.37***	0.87	0.86	0.82*
College degree or more	0.62*	0.75*	0.62	0.91
Hispanic ethnicity	0.32***	1.01	0.73	0.95
Black, non-Hispanic	2.18***	1.08	2.09***	1.19
Other Nonwhite race	0.93	0.66	1.09	1.68**

HRS

Poor self-rated health
Impact
Reported disability

Several indicators for
health limitations or
conditions are strongly
associated with self-
reported disability

5. Empirical Analysis - Estimating Work Capacity

- Several conclusions from analysis above:
 - **Health** variables are much **less predictive** for retirement than they are for disability
 - Functional limitations, ADLs or IADLs lead to a greater probability of retirement in the MEPS, but the effects are generally smaller than for disability
 - None of the non-health variables are significantly associated with retirement for males
 - For females, college education is associated with lower retirement, as is being unmarried

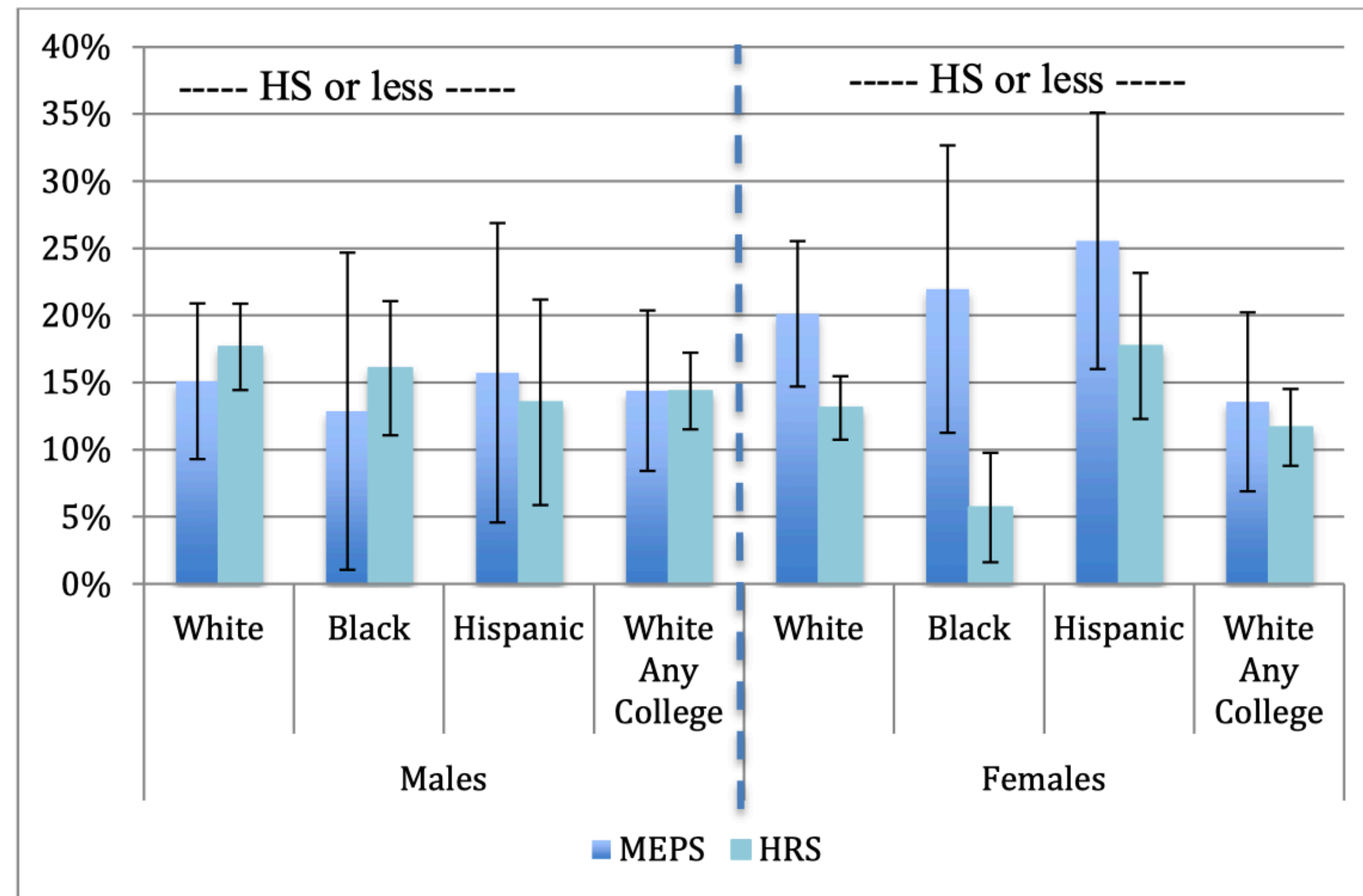
5. Empirical Analysis - Estimating Work Capacity

Figure 5: Change in Work Capacity for Population Aged 62-64

- Simulations

(a) Change in Probability of Being in the Labor Force, Assuming Early Eligibility Age is 65

1. Predicted rise in labor force participation is large



5. Empirical Analysis - Estimating Work Capacity

- Simulations

1. Predicted rise in labor force participation is large

Table A4: Change in Probability of Labor Force Status (%)

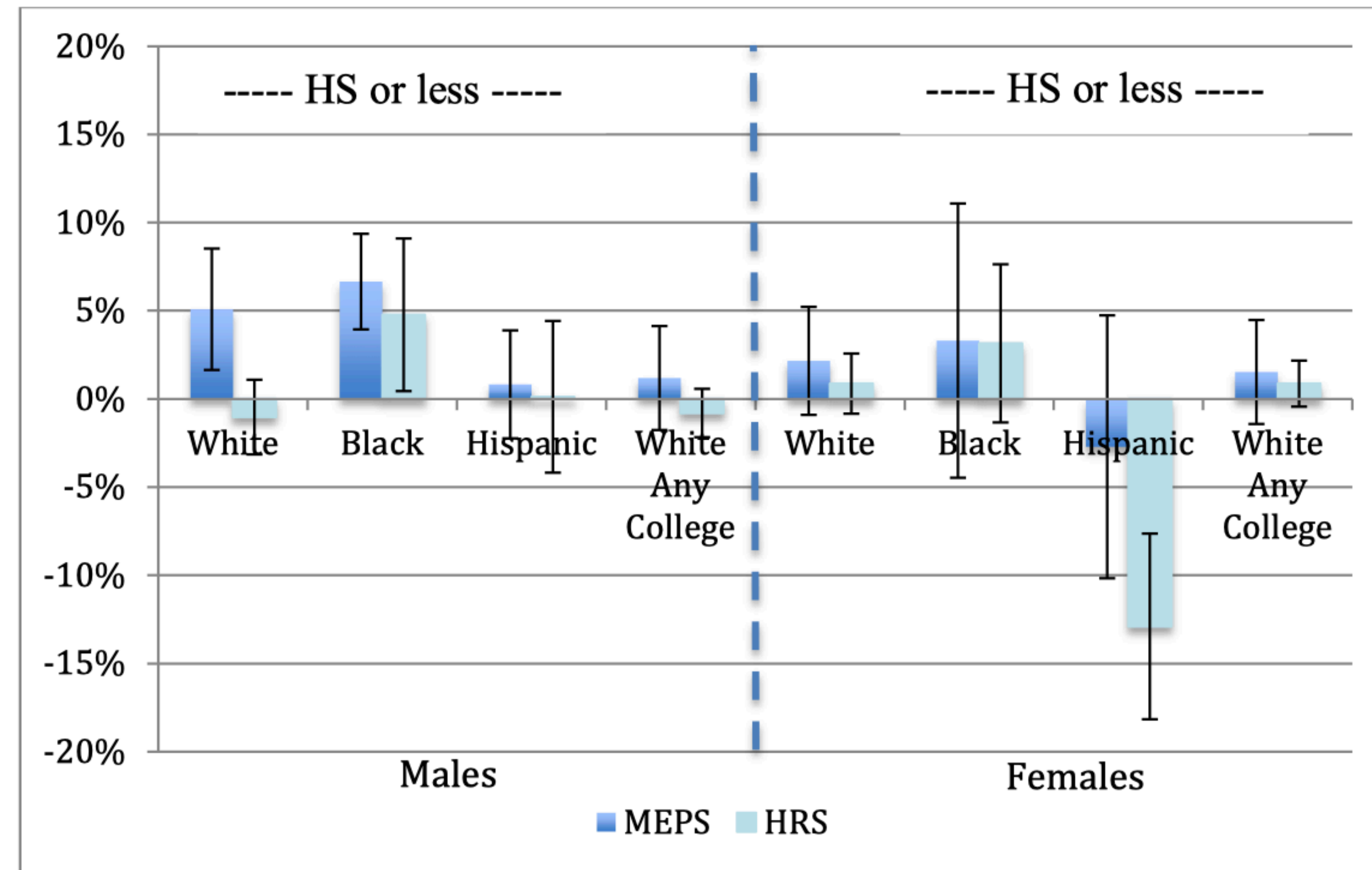
			In labor force	Disabled
<i>MEPS data</i>				
Men	HS or less	White	15	6
		Black	12	6
		Hispanic	21	0
	Some college	White	15	2
Women	HS or less	White	19	4
		Black	15	3
		Hispanic	27	-2
	Some college	White	15	2
<i>HRS data</i>				
Men	HS or less	White	18	-1
		Black	16	5
		Hispanic	14	0
	Some college	White	14	-1
		Black	10	-4
		Hispanic	11	-4
Women	HS or less	White	13	1
		Black	5.7	3
		Hispanic	18	-13
	Some college	White	12	1
		Black	20	-6
		Hispanic	20	-9

5. Empirical Analysis - Estimating Work Capacity

- Simulations

2. Pattern for disability is quite variable by group

(b) Change in Probability of Being Disabled, Assuming Early Eligibility Age is 65



5. Empirical Analysis - Estimating Work Capacity

- Simulations

2. Pattern for disability is quite variable by group

Table A4: Change in Probability of Labor Force Status (%)

			In labor force	Disabled
<i>MEPS data</i>				
Men	HS or less	White	15	6
		Black	12	6
		Hispanic	21	0
	Some college	White	15	2
Women	HS or less	White	19	4
		Black	15	3
		Hispanic	27	-2
	Some college	White	15	2
<i>HRS data</i>				
Men	HS or less	White	18	-1
		Black	16	5
		Hispanic	14	0
	Some college	White	14	-1
		Black	10	-4
		Hispanic	11	-4
Women	HS or less	White	13	1
		Black	5.7	3
		Hispanic	18	-13
	Some college	White	12	1
		Black	20	-6
		Hispanic	20	-9

5. Empirical Analysis - Earnings among individuals

- Earnings matter
 - For individuals who would delay retirement
 - Use earnings in the HRS to simulate the earnings of non-working individuals aged 62-64 based on the earnings of workers 59-61
 - Change dependent variable to be earnings of current workers
 - Would workers who are induced to stay in the labor force because of an increase in the EEA likely earn much less than individuals who currently work at these ages?
- Yes

5. Empirical Analysis - Earnings among individuals

Table 2: Average Earnings for Workers Age 62-64 and Predicted Earnings of Non-workers (Respondents reporting 12 or fewer years education)

	Males			Females		
	White	Black	Hispanic	White	Black	Hispanic
<u>Earnings of current workers</u> (Standard Error)	\$33,239 (1,070)	\$31,167 (1,492)	\$25,989 (1,583)	\$21,702 (653)	\$16,998 (846)	\$17,773 (1,363)
<u>Predicted earnings, nonworkers</u> (Standard Error)	28,176 (1,990)	23,457 (3,063)	29,910 (6,232)	17,362 (816)	14,150 (1,162)	14,205 (1,618)
Workers – nonworkers (Standard Error)	5,063 (1,925)	7,710 (2,885)	-3,921 (5,989)	4,340 (753)	2,848 (823)	3,569 (1,339)
<u>% difference</u>	15%	25%	-15%	20%	17%	20%

Note: Earnings are expressed in constant 2002 dollars. Standard errors of predicted earnings for non-workers and the difference between earnings of workers and non-workers were obtained using bootstrapping techniques, based on parameter estimates from generalized linear models of earnings for workers aged 62-64. The predicted wage for current non-workers is weighted by the predicted probability of being in the labor force (based on the work capacity models). The difference in median earnings observed – predicted was 1,335 (4.5%), 7,119 (26%), and 1,658 (7.4%) for male whites, blacks, and Hispanics, respectively. For women the same figures are: 5,227 (28%), 4,063 (30%) and 4,211 (31%).

6. Conclusions

- Simulated the work capacity of individuals in age groups targeted by policies that raise the age of eligibility for Social Security (62->65)
- There are additional working capacity: 15-20% more individuals could work than currently do
- However, rates of new disability may increase: 2-6%
- Significant difference in these findings across groups
- Overall, good health enjoyed by individuals aging throughout their 60s implies a **tremendous potential for labor force participation**
- Reduce the costs of the Social Security program

Thanks!