The impact of health on labor supply near retirement: Online Appendix

Richard Blundell, Jack Britton, Monica Costa Dias, Eric French

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1 Data and descriptive statistics

The English Longitudinal Study of Ageing (ELSA) and US Health and Retirement Study (HRS) share the same sample design, longitudinal structure and, to a large extent, questionnaire. Both surveys provide a detailed characterisation of the respondent's and spouse's health status, cognitive ability, employment, earnings, socio-economic status and demographics for those 50 and older. The main text of the paper describes the data in detail.

Table A1 describes the distribution of individuals by number of interviews they have participated in. In ELSA, just over 4,000 individuals were observed in only one wave, while over 5,000 individuals were observed in all six waves. The high frequency of a single observation in ELSA is partly due to the fact that the last sample refreshement coincided with the last wave of our sample. This is not the case for the HRS, and accordingly the number of individuals observed in a single wave only is proportionally much smaller. For the HRS, the peak instead is for two interviews, again consistent with a booster sample being drawn in the penultimate wave of our sample. Over 14,000 individuals are interviewed at least six times in the HRS, and over 5,600 are interviewed in all of the nine waves that we use. The bottom row reports the total number of individuals in each sample.

Table A1: ELSA and HRS no. waves appeared

No. Waves	ELSA Frequency	HRS Frequency
1	4,064	3,219
2	2,141	8,072
3	3,512	2,243
4	2,036	2,093
5	1,166	4,038
6	5,062	1,908
7		2,016
8		4,666
9		5,660
Total	17,981	33,915

Sample sizes for 50-70 year olds only. Total row gives the total number of individuals in each survey.
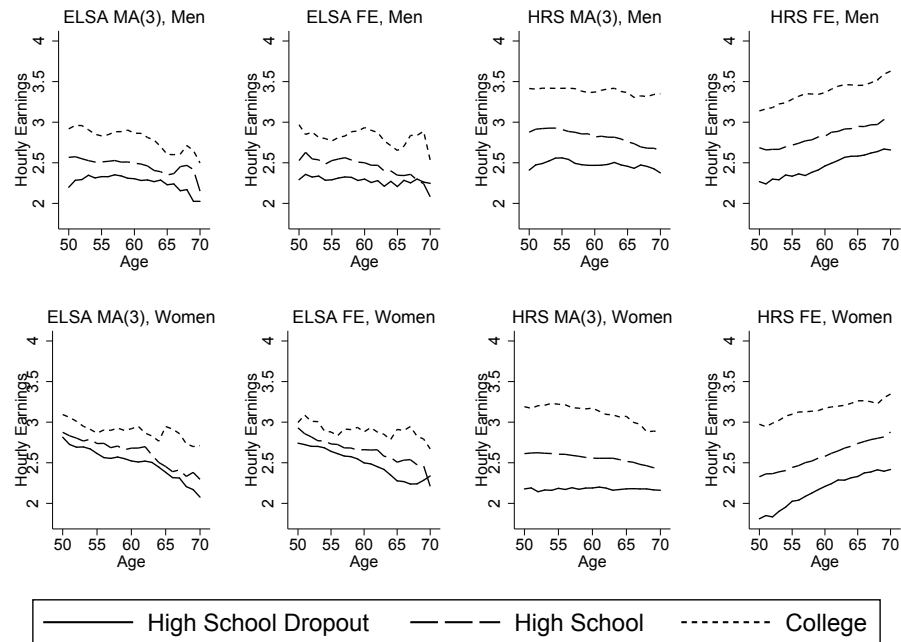
2 Additional figures

2.1 Employment

Figure A1: Log of hourly earnings on age, by gender and education
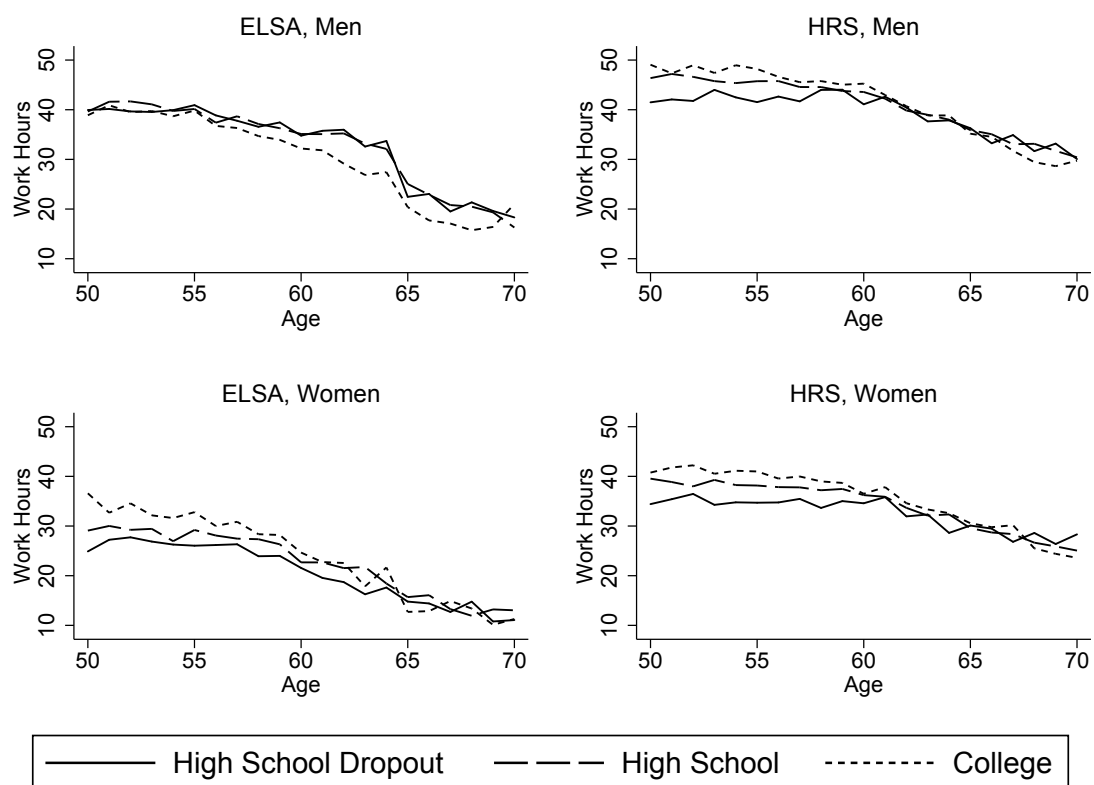Notes: Log of hourly earnings, conditional on working.

Figure A2: Work hours per week on age, by gender and education
Notes: Hours, conditional on working.
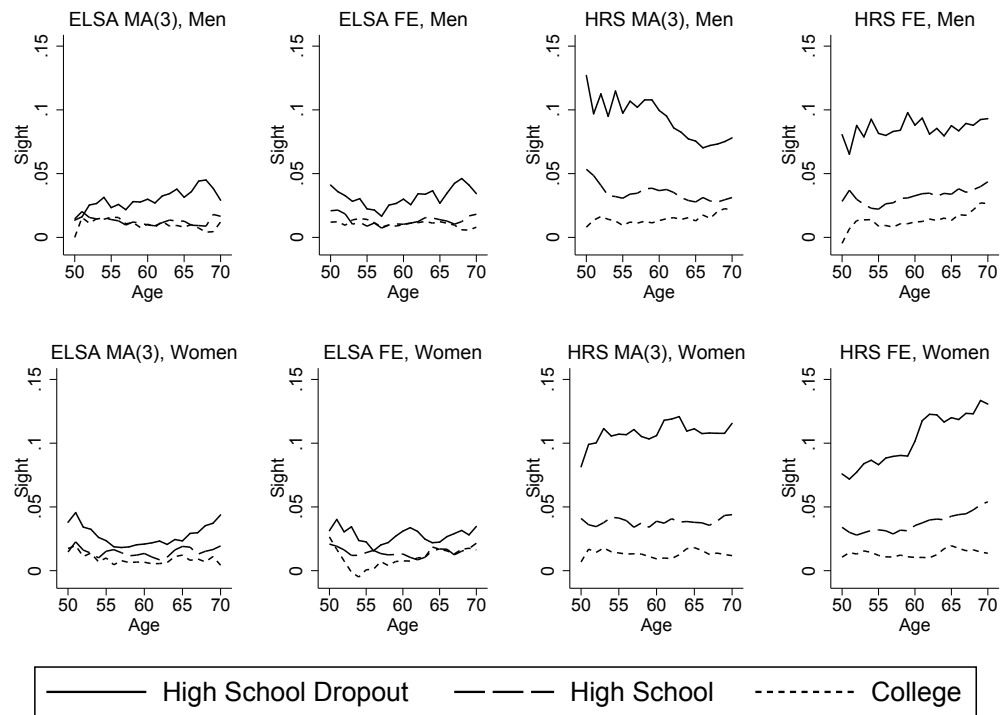
2.2 Objective and ADL health measures

Figure A3: Proportion of individuals with poor eyesight on age, by gender and education
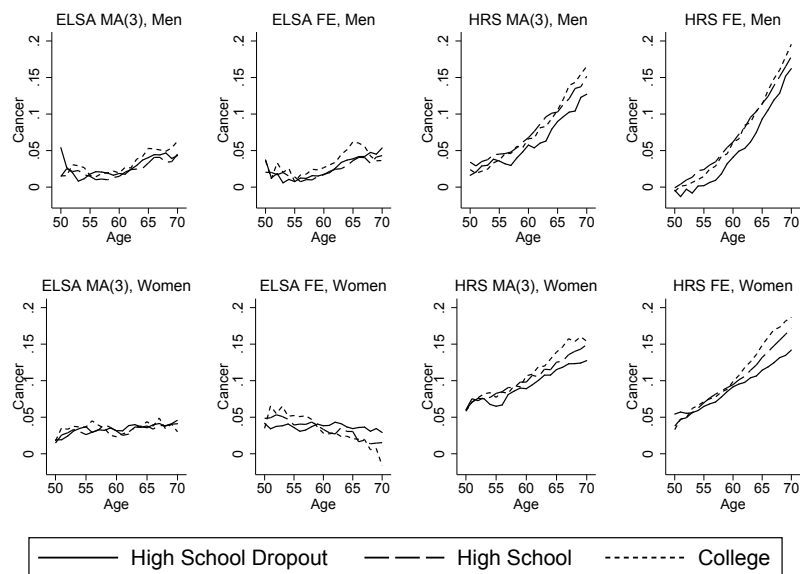

Figure A4: Prevalence of cancer on age, by gender and education
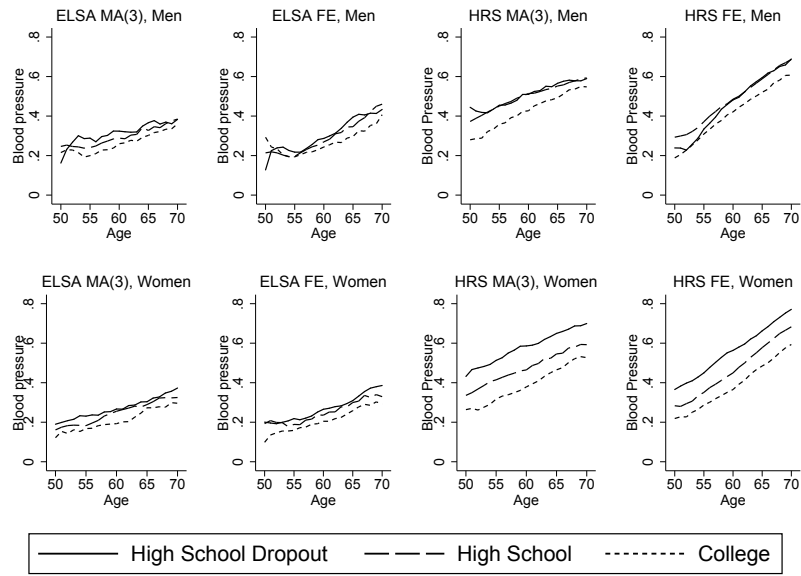
Figure A5: Proportion of individuals with high blood pressure on age, by gender and education
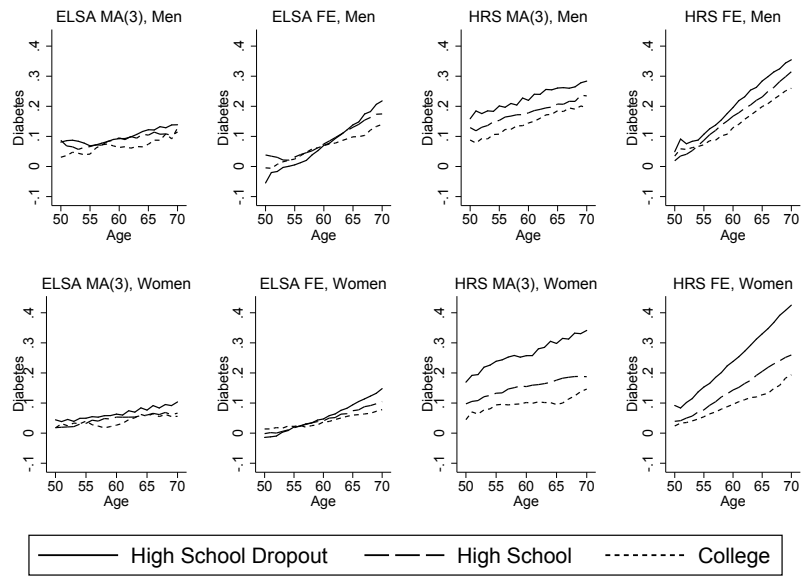
Figure A6: Proportion of individuals with diabetes on age, by gender and education
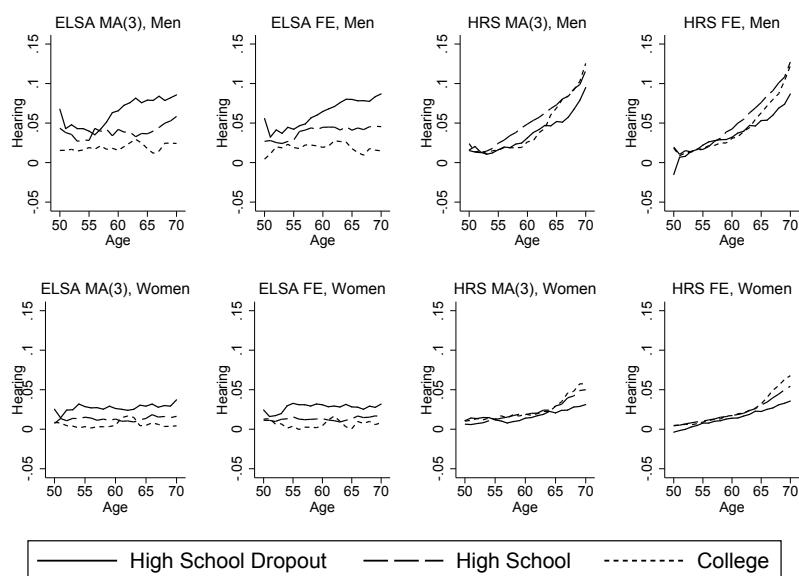
Figure A7: Proportion of individuals with poor hearing on age, by gender and education
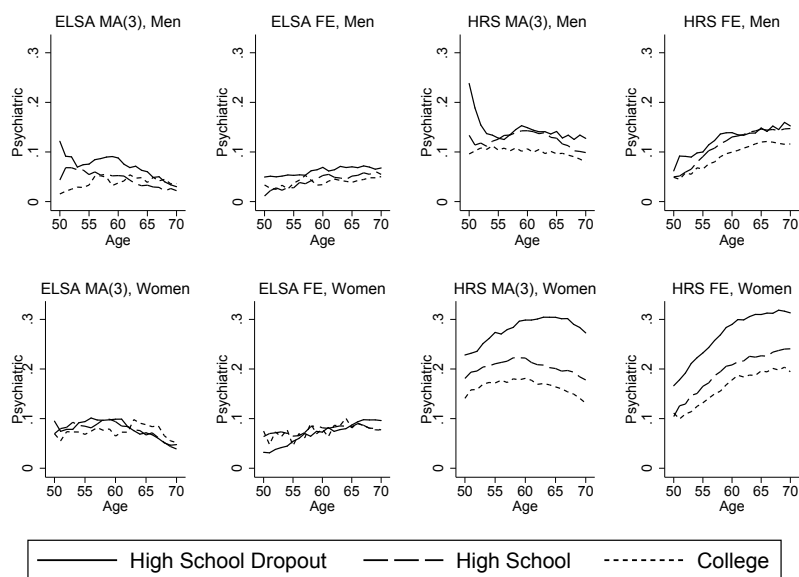
Figure A8: Proportion of individuals with psychiatric problems on age, by gender and education

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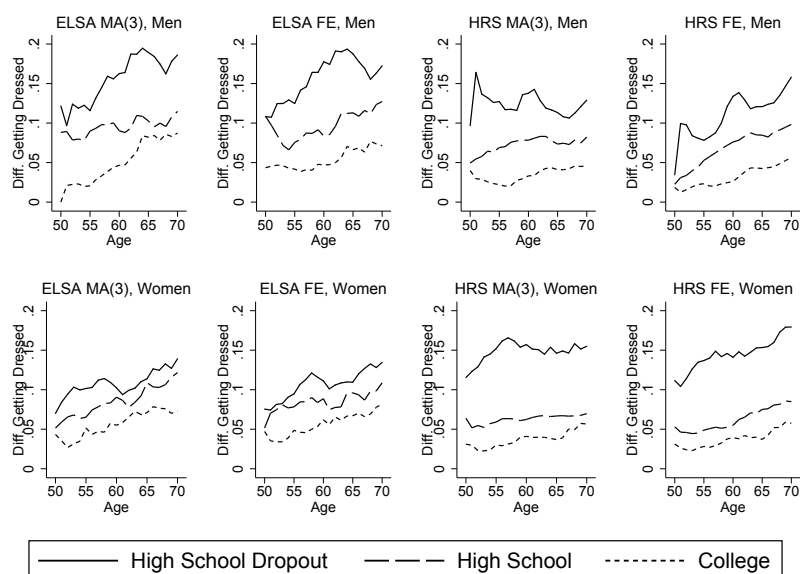
Figure A9: ADL: Difficulty Getting Dressed on age, by gender and education
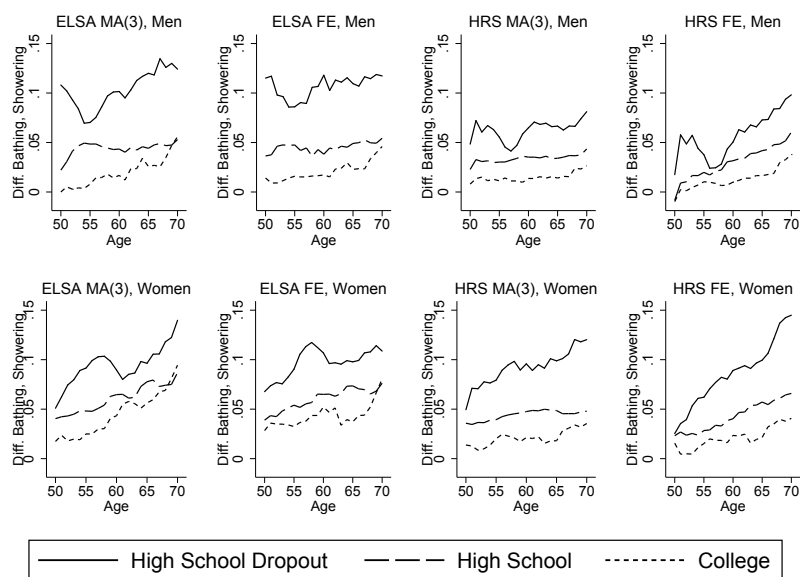
Figure A10: ADL: Difficulty Bathing or Showering on age, by gender and education

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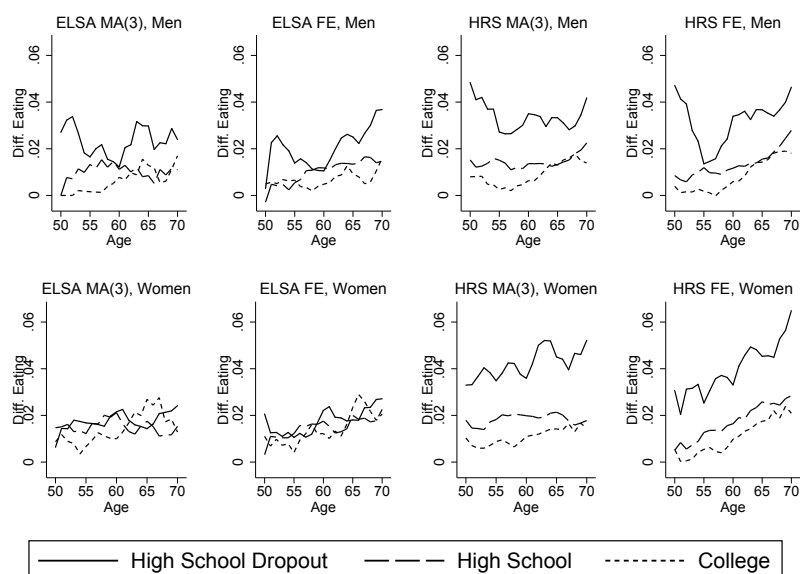
Figure A11: ADL: Difficulty Eating on age, by gender and education
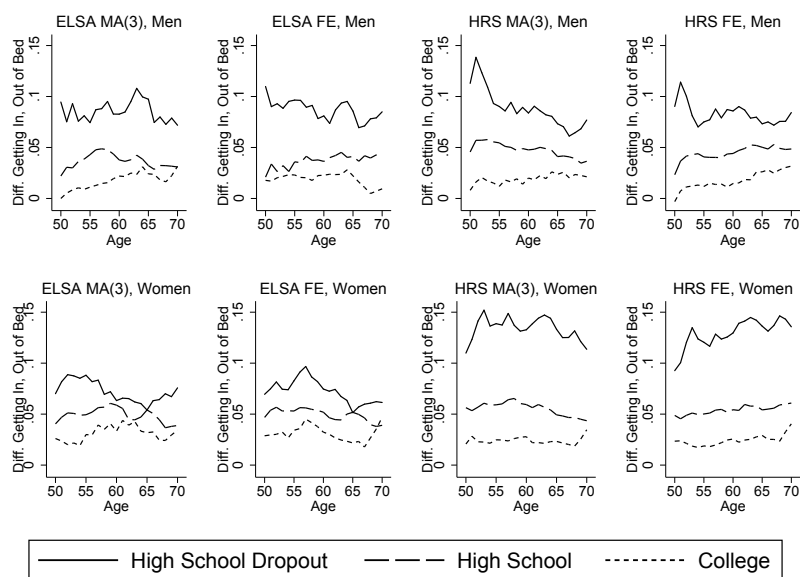
Figure A12: ADL: Difficulty Getting In or Out of Bed on age, by gender and education
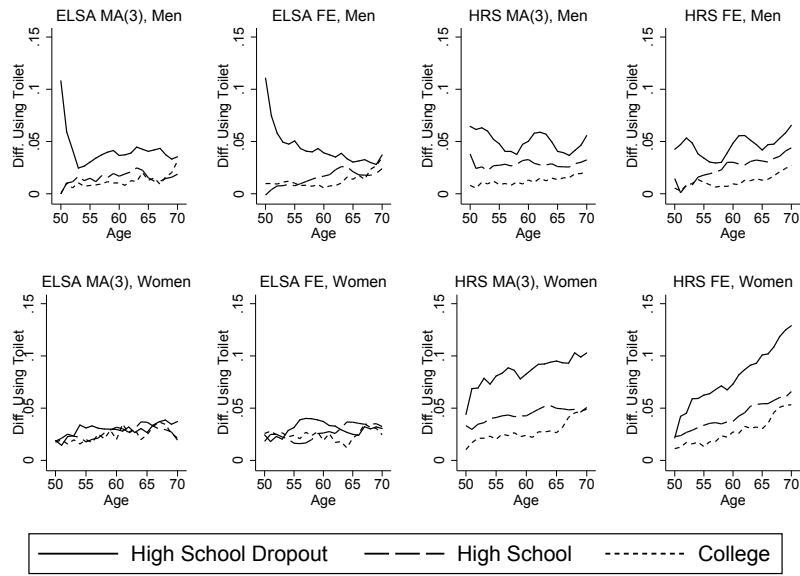
Figure A13: ADL: Difficulty Using the Toilet on age, by gender and education

2.3 Subjective health measures
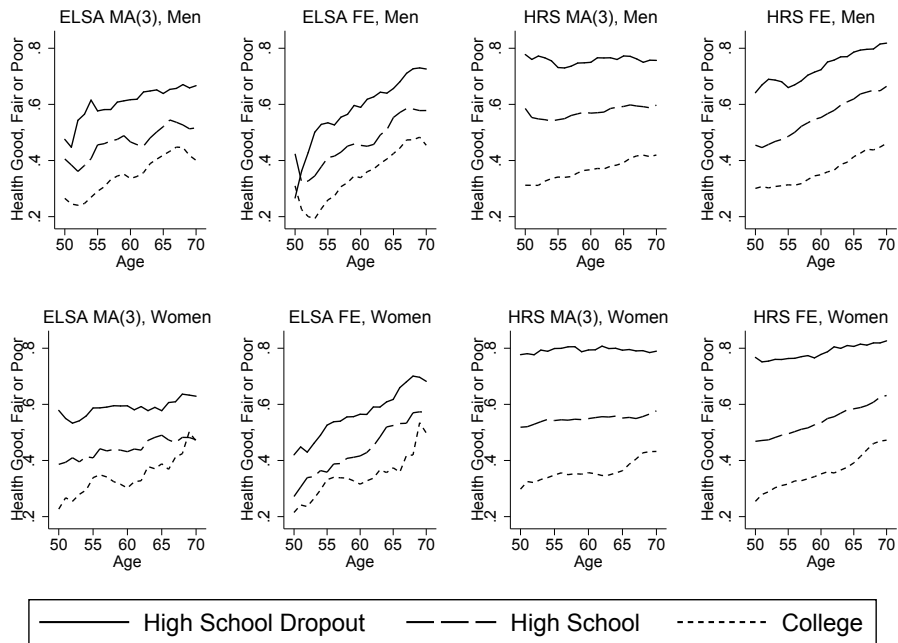
Figure A14: Proportion of individuals reporting good, fair or poor health (as opposed to very good or excellent) on age, by gender and education
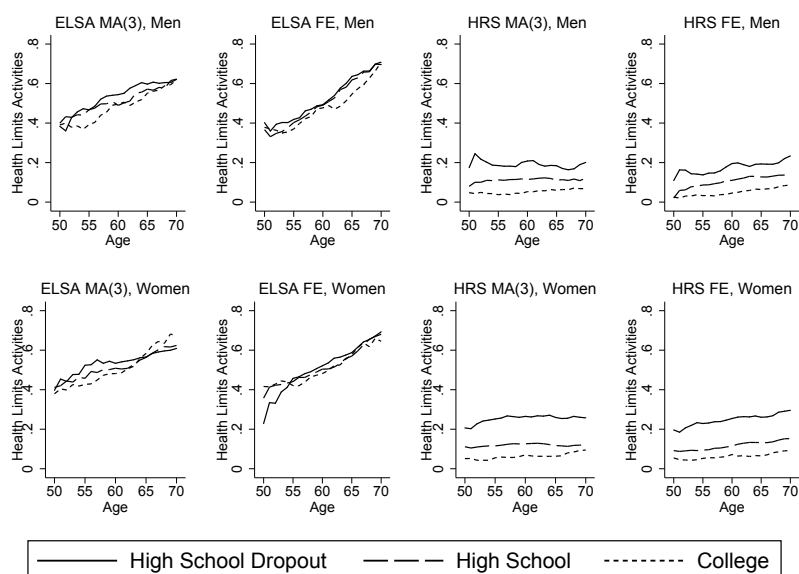
Figure A15: Proportion of individuals saying health limits their activities on age, by gender and education
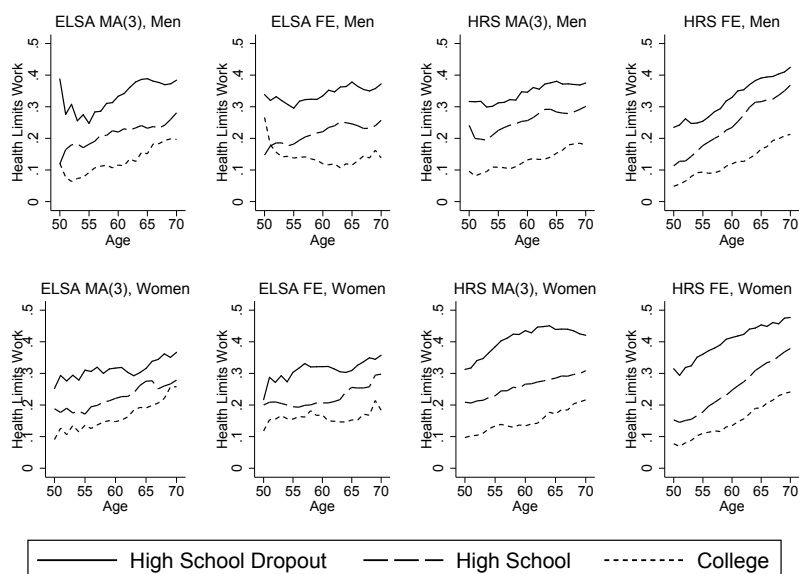
Figure A16: Proportion of individuals saying health limits their ability to work on age, by gender and education

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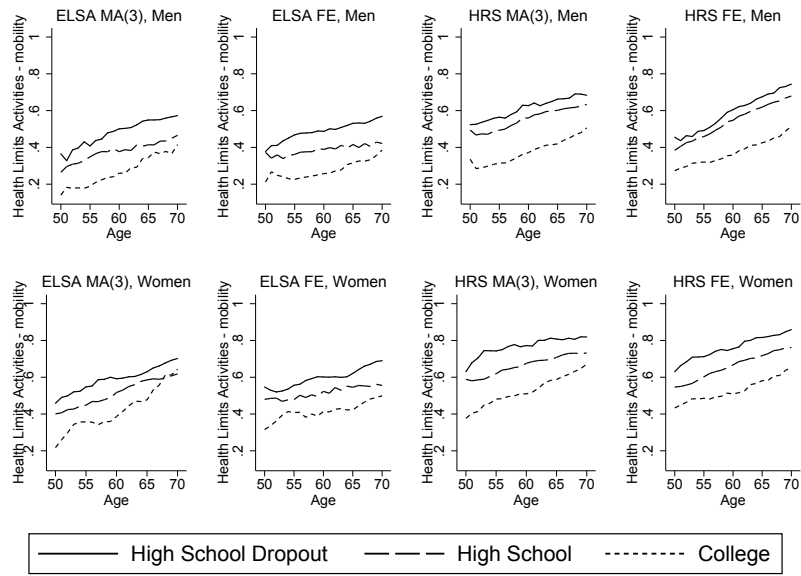
Figure A17: Proportion of individuals with limited activities via mobility measures on age, by gender and education

2.4 Mobility measures
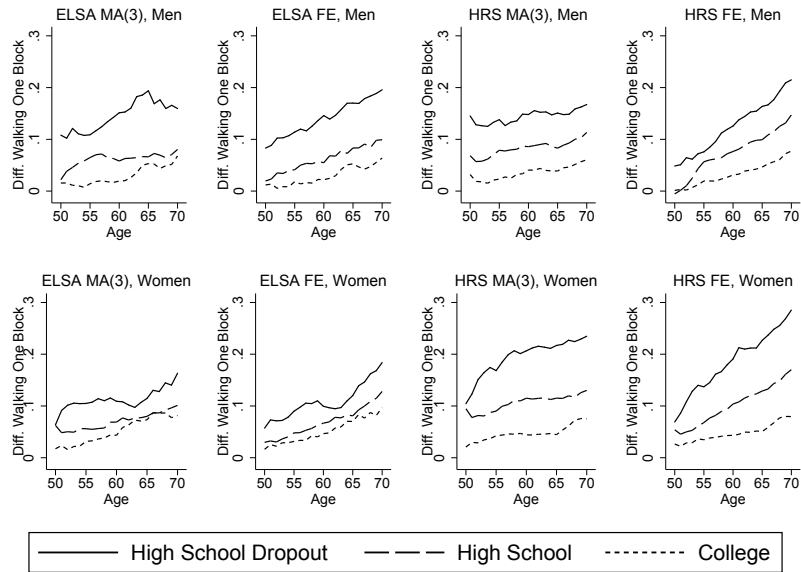
Figure A18: Mobility: Difficulty Walking One Block on age, by gender and education
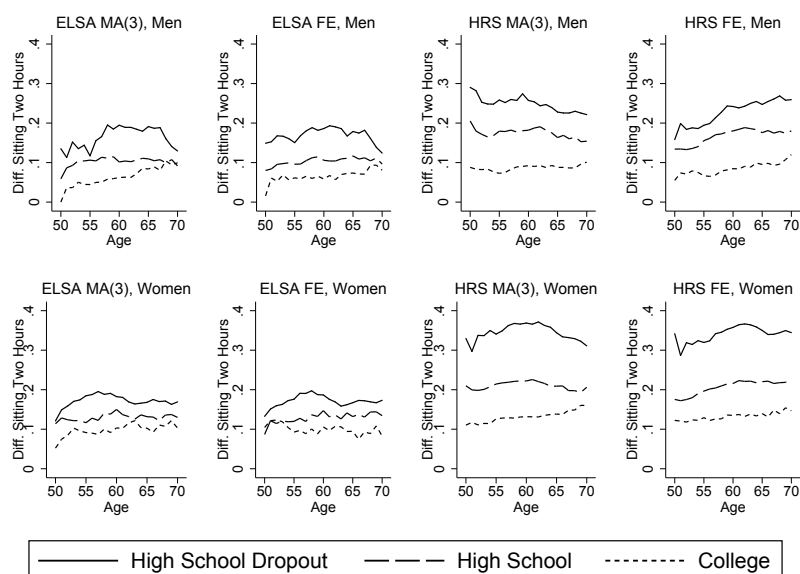
Figure A19: Mobility: Difficulty Sitting for Two hours on age, by gender and education
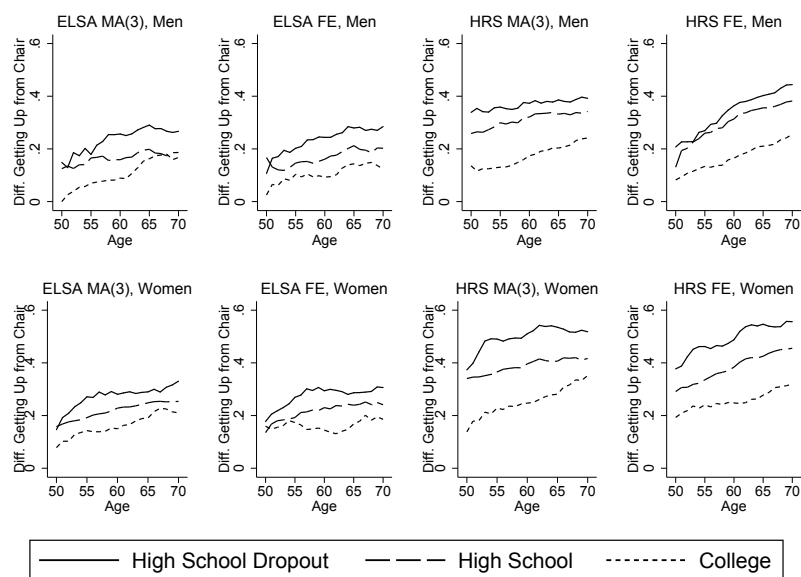
Figure A20: Mobility: Difficulty Getting Up from a Chair on age, by gender and education
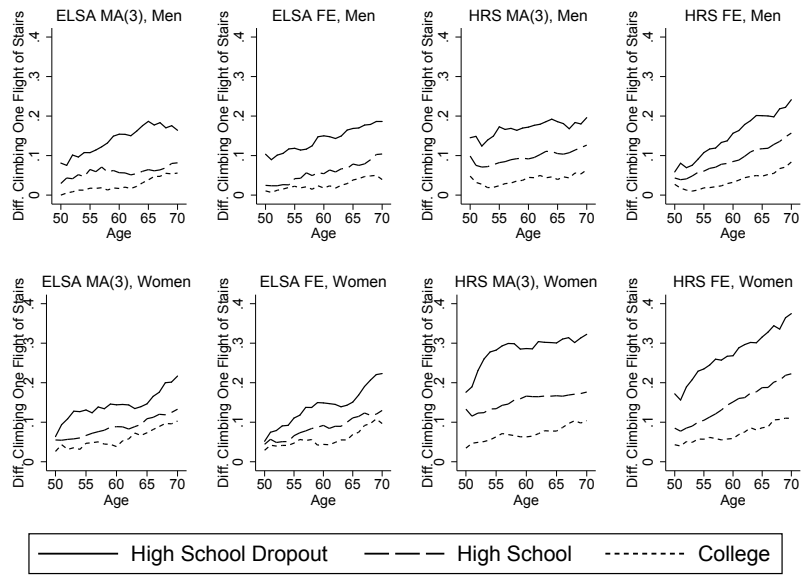
Figure A21: Mobility: Difficulty Climbing One Flight of Stairs on age, by gender and education
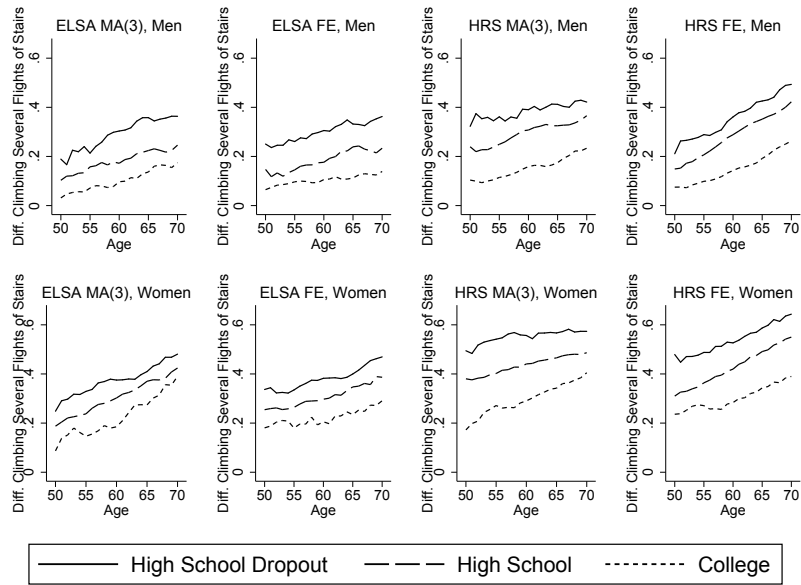
Figure A22: Mobility: Difficulty Climbing Several Flights of Stairs by age, gender and education
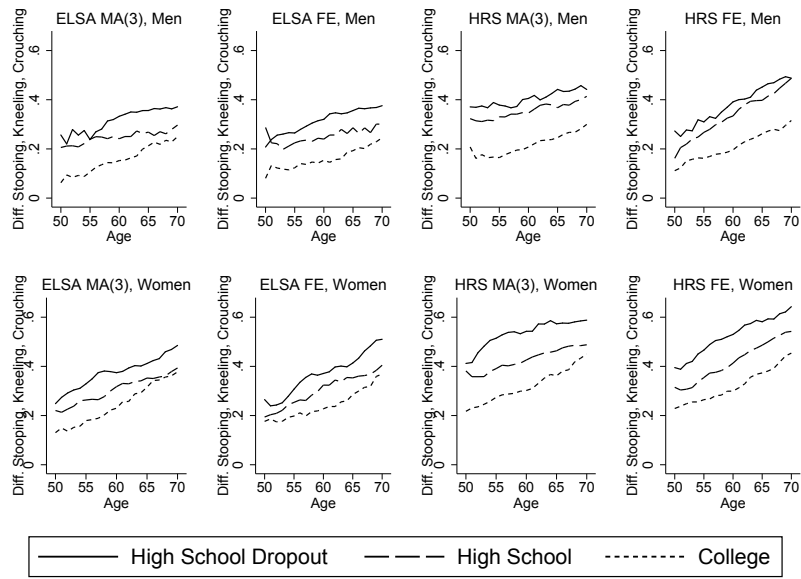
Figure A23: Mobility: Difficulty Stooping, Kneeling, Crouching on age, by gender and education
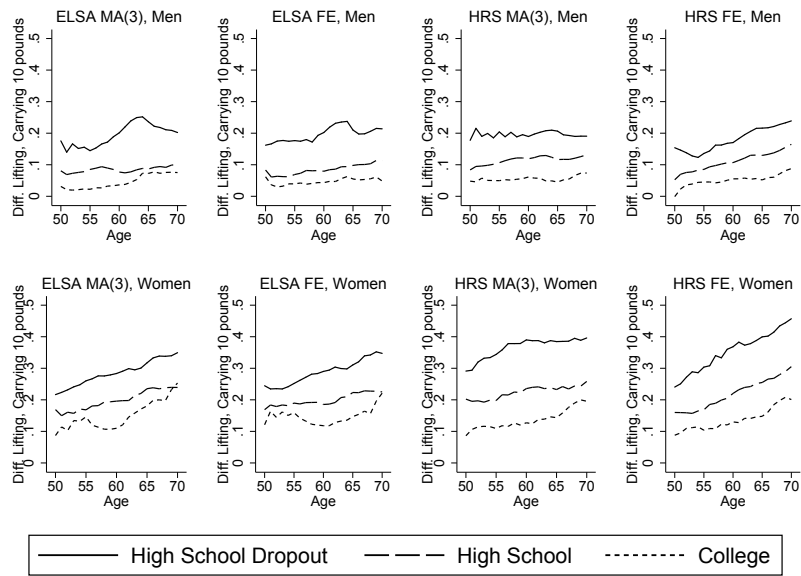
Figure A24: Mobility: Difficulty Lifting or Carrying 10 pounds on age, by gender and education
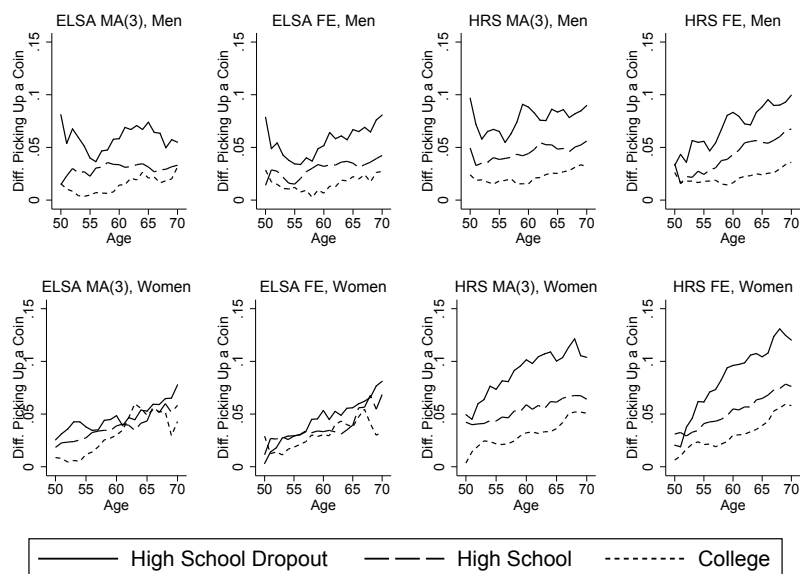
Figure A25: Mobility: Difficulty Picking Up a Coin on age, by gender and education
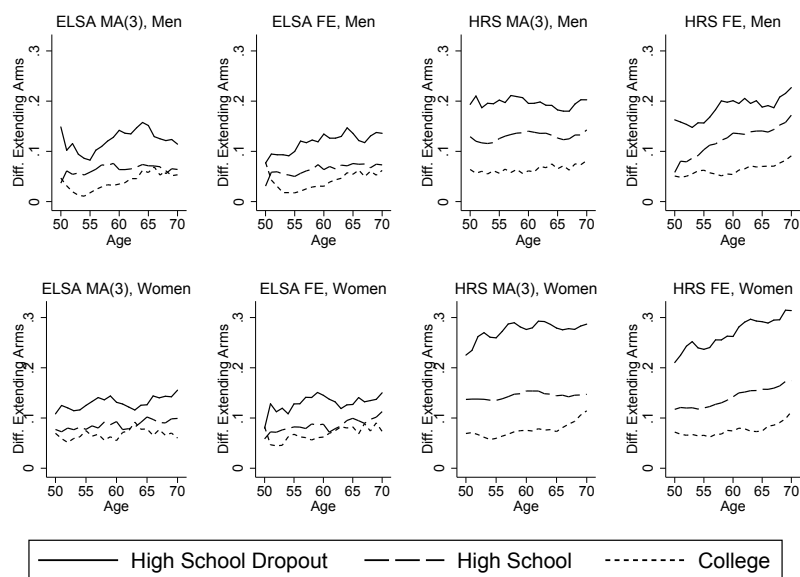
Figure A26: Mobility: Difficulty Extending Arms on age, by gender and education
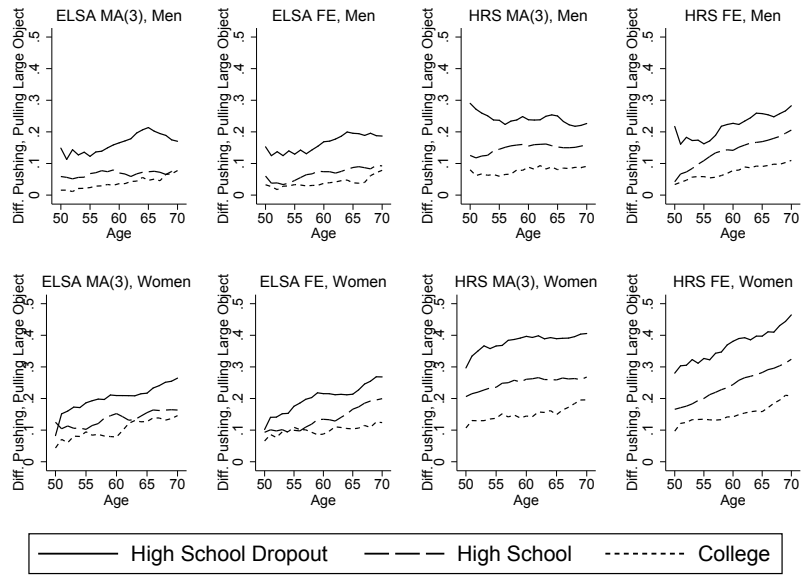
Figure A27: Mobility: Difficulty Pushing or Pulling Large Objects on age, by gender and education

2.5 IADL measures
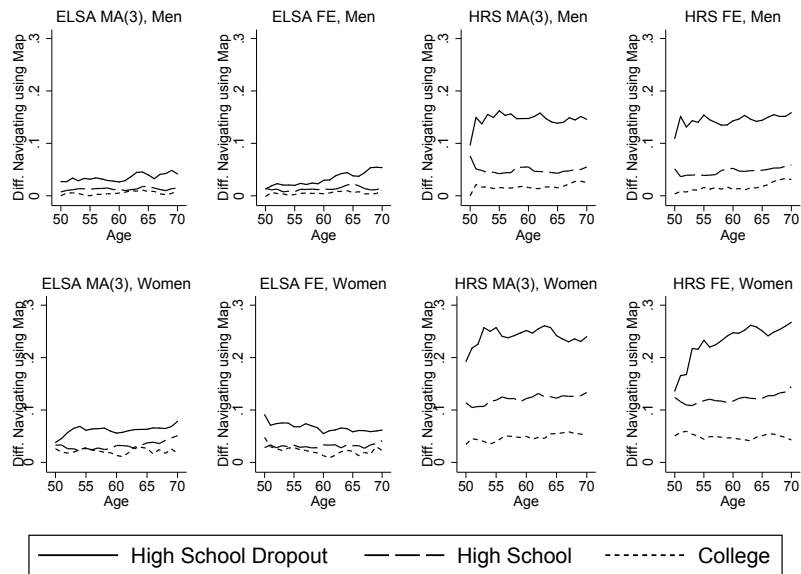
Figure A28: IADL: Difficulty Navigating using Map on age, by gender and education
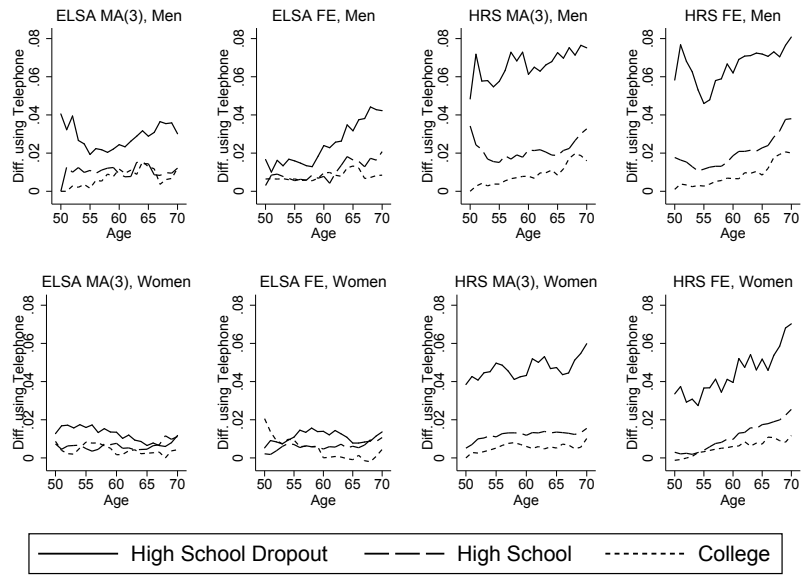
Figure A29: IADL: Difficulty in using Telephone on age, by gender and education
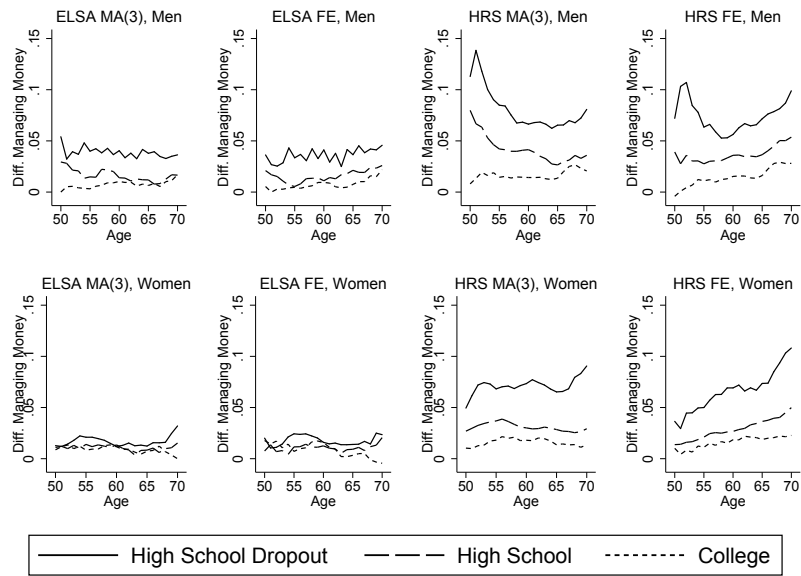
Figure A30: IADL: Difficulty in Managing Money on age, by gender and education
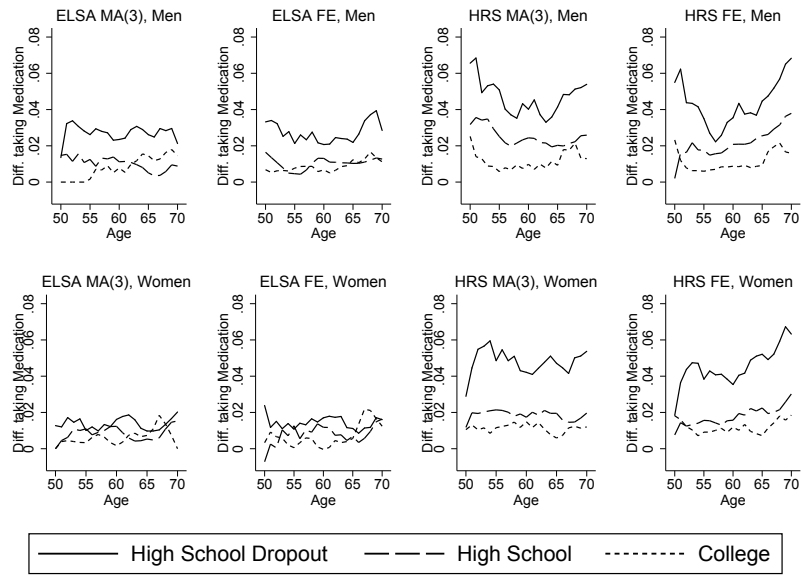
Figure A31: IADL: Difficulty in taking Medication on age, by gender and education
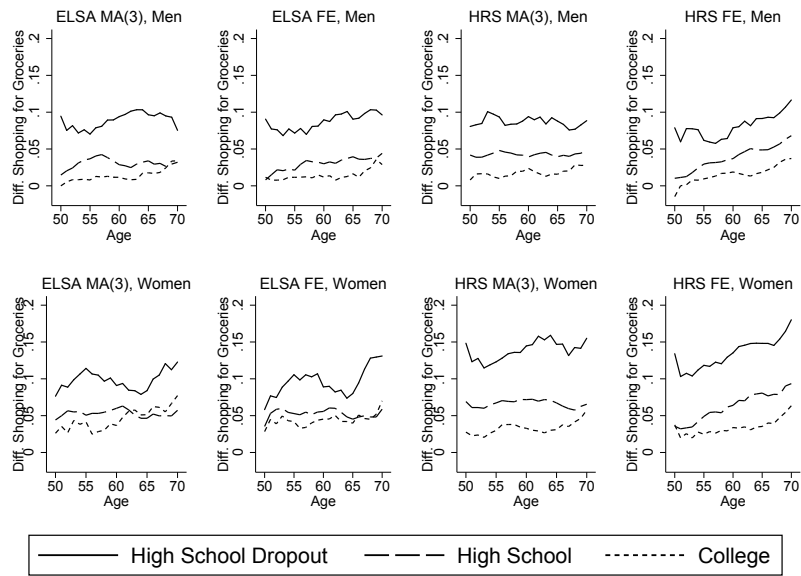
Figure A32: IADL: Difficulty in Shopping for Groceries on age, by gender and education

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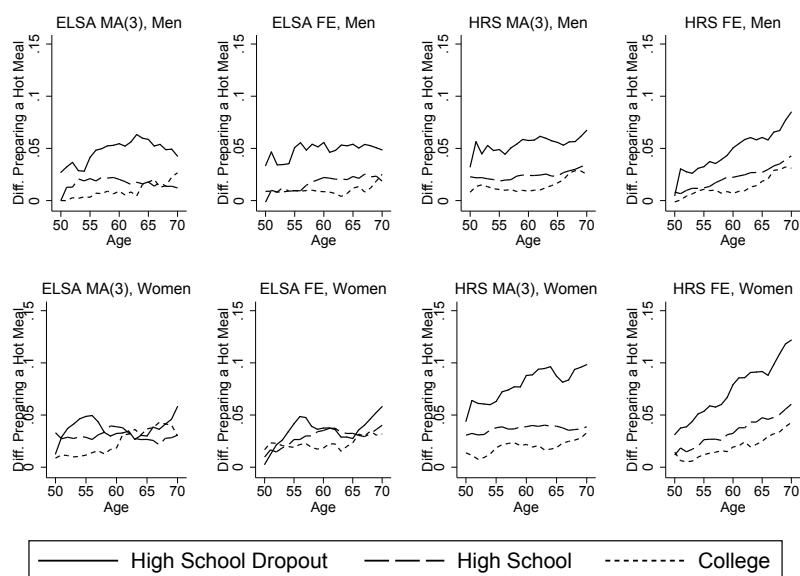
Figure A33: IADL: Difficulty in Preparing a Hot Meal on age, by gender and education

2.6 Cognitive measures
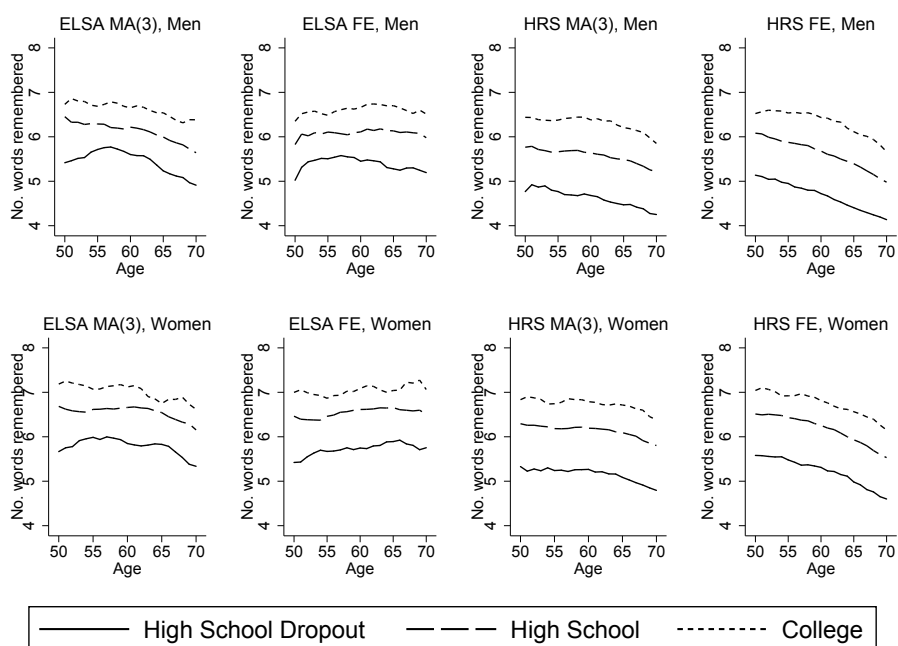
Figure A34: Recall test - number of words immediately recalled from a list of ten words - on age, by gender and education
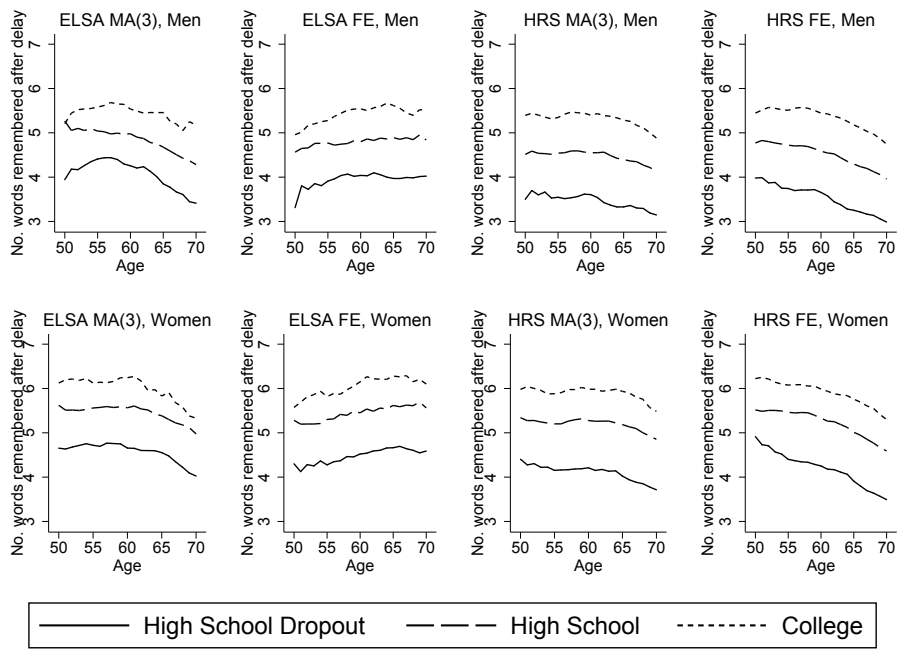
Figure A35: Delayed recall test - number of words recalled from the same list of ten words after a delay - on age, by gender and education
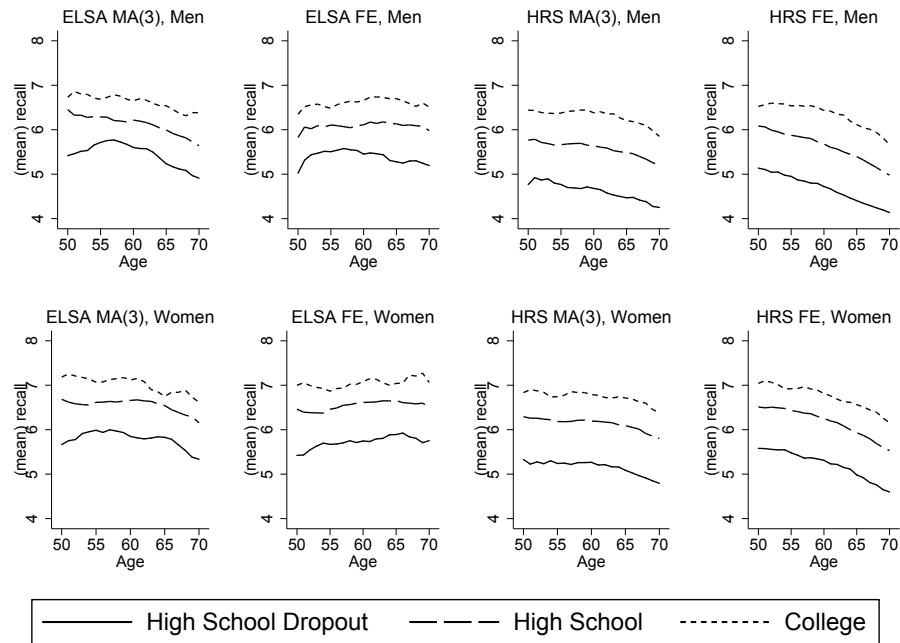
Figure A36: Immediate recall test with first observed wave removed - number of words recalled from the same list of ten words after a delay - on age, by gender and education
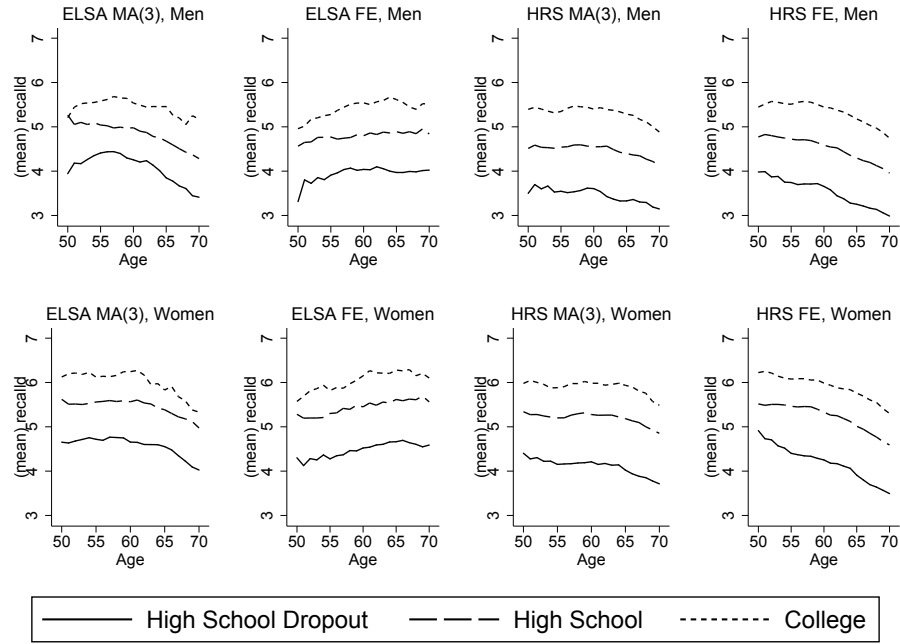
Figure A37: Delayed recall test with first observed wave removed - number of words recalled from the same list of ten words after a delay - on age, by gender and education

3 Additional tables

3.1 Principal components analysis tables

Table A2 shows estimates of the weights used to construct the health index. We use all three measures of subjective health independently. In particular, we find no evidence of a skip pattern between the two measures 'health limits work' and 'health limits daily activities' that could justify merging the two measures.

Table A2: Principal component analysis: weights for subjective health variables

	Comp1	Comp2	Comp3
ELSA			
Health limits activities	0.525	0.840	0.135
Self-rated health	0.612	-0.262	-0.746
Health limits work	0.592	-0.475	0.652
HRS			
Health limits activities	0.541	0.840	0.037
Self-rated health	0.597	-0.352	-0.721
Health limits work	0.593	-0.412	0.692

Table A3: Principal component analysis: weights for cognition variables

	Comp1	Comp2	Comp3	Comp4
ELSA				
Immediate Recall	0.632	-0.315	0.012	-0.708
Delayed Recall	0.631	-0.321	0.013	0.706
IADL: Map	0.310	0.643	0.700	0.003
IADL: Money	0.327	0.620	-0.713	0.003
HRS				
Immediate Recall	0.648	-0.278	0.049	-0.707
Delayed Recall	0.647	-0.281	0.049	0.707
IADL: Map	0.251	0.701	0.668	0.002
IADL: Money	0.313	0.594	-0.741	0.002

3.2 IV first stage tables

Table A4: ELSA IV Regression First Stage (without initial conditions)

	Men			Women		
	High School Dropout	High School	College	High School Dropout	High School	College
Chronic illnesses						
Cancer	-0.338***	-0.533***	-0.516***	-0.517***	-0.566***	-0.675***
	(0.092)	(0.085)	(0.087)	(0.075)	(0.067)	(0.108)
Diabetes	-0.282***	-0.387***	-0.367***	-0.418***	-0.403***	-0.684***
	(0.050)	(0.043)	(0.060)	(0.049)	(0.051)	(0.094)
Poor eyesight	-0.671***	-0.734***	-0.271*	-0.403***	-0.676***	-1.123***
	(0.089)	(0.114)	(0.159)	(0.077)	(0.092)	(0.204)
Poor hearing	-0.371***	-0.393***	-0.503***	-0.568***	-0.515***	0.016
	(0.060)	(0.062)	(0.110)	(0.076)	(0.096)	(0.248)
High blood pressure	-0.214***	-0.266***	-0.249***	-0.224***	-0.312***	-0.265***
	(0.034)	(0.028)	(0.035)	(0.029)	(0.026)	(0.046)
Arthritis	-0.577***	-0.578***	-0.510***	-0.619***	-0.578***	-0.519***
	(0.036)	(0.031)	(0.041)	(0.027)	(0.025)	(0.044)
Psychiatric	-0.504***	-0.561***	-0.685***	-0.556***	-0.554***	-0.633***
	(0.060)	(0.059)	(0.078)	(0.046)	(0.040)	(0.067)
Lung disease	-0.741***	-0.694***	-1.023***	-0.666***	-0.857***	-0.910***
	(0.059)	(0.071)	(0.122)	(0.058)	(0.066)	(0.154)
Stroke	-0.752***	-1.034***	-0.940***	-0.670***	-0.766***	-0.891***
	(0.117)	(0.137)	(0.241)	(0.125)	(0.139)	(0.241)
Heart attack	-0.645***	-0.604***	-0.508***	-0.636***	-0.631***	-0.937**
	(0.091)	(0.093)	(0.142)	(0.139)	(0.185)	(0.415)
N	4692	6327	3362	6957	7911	2759

Table A5: ELSA IV Regression First Stage (with initial conditions)

	Men			Women		
	High School Dropout	High School	College	High School Dropout	High School	College
Chronic illnesses						
Cancer	-0.338***	-0.533***	-0.516***	-0.517***	-0.566***	-0.675***
	(0.092)	(0.085)	(0.087)	(0.075)	(0.067)	(0.108)
Diabetes	-0.282***	-0.387***	-0.367***	-0.418***	-0.403***	-0.684***
	(0.050)	(0.043)	(0.060)	(0.049)	(0.051)	(0.094)
Poor eyesight	-0.671***	-0.734***	-0.271*	-0.403***	-0.676***	-1.123***
	(0.089)	(0.114)	(0.159)	(0.077)	(0.092)	(0.204)
Poor hearing	-0.371***	-0.393***	-0.503***	-0.568***	-0.515***	0.016
	(0.060)	(0.062)	(0.110)	(0.076)	(0.096)	(0.248)
High blood pressure	-0.214***	-0.266***	-0.249***	-0.224***	-0.312***	-0.265***
	(0.034)	(0.028)	(0.035)	(0.029)	(0.026)	(0.046)
Arthritis	-0.577***	-0.578***	-0.510***	-0.619***	-0.578***	-0.519***
	(0.036)	(0.031)	(0.041)	(0.027)	(0.025)	(0.044)
Psychiatric	-0.504***	-0.561***	-0.685***	-0.556***	-0.554***	-0.633***
	(0.060)	(0.059)	(0.078)	(0.046)	(0.040)	(0.067)
Lung disease	-0.741***	-0.694***	-1.023***	-0.666***	-0.857***	-0.910***
	(0.059)	(0.071)	(0.122)	(0.058)	(0.066)	(0.154)
Stroke	-0.752***	-1.034***	-0.940***	-0.670***	-0.766***	-0.891***
	(0.117)	(0.137)	(0.241)	(0.125)	(0.139)	(0.241)
Heart attack	-0.645***	-0.604***	-0.508***	-0.636***	-0.631***	-0.937**
	(0.091)	(0.093)	(0.142)	(0.139)	(0.185)	(0.415)
N	4692	6327	3362	6957	7911	2759

Table A6: HRS IV Regression First Stage (without initial conditions)

	Men			Women		
	High School Dropout	High School	College	High School Dropout	High School	College
Chronic illnesses						
Cancer	-0.386***	-0.269***	-0.320***	-0.130***	-0.212***	-0.236***
	(0.051)	(0.025)	(0.033)	(0.035)	(0.018)	(0.030)
Diabetes	-0.314***	-0.373***	-0.451***	-0.379***	-0.382***	-0.390***
	(0.032)	(0.019)	(0.026)	(0.024)	(0.016)	(0.031)
Poor eyesight	-0.502***	-0.655***	-0.760***	-0.442***	-0.620***	-0.569***
	(0.051)	(0.042)	(0.081)	(0.035)	(0.030)	(0.084)
Poor hearing	0.098	-0.010	-0.106**	-0.124*	-0.103***	-0.115*
	(0.065)	(0.030)	(0.043)	(0.075)	(0.036)	(0.059)
High blood pressure	-0.286***	-0.241***	-0.241***	-0.297***	-0.249***	-0.307***
	(0.029)	(0.015)	(0.019)	(0.023)	(0.012)	(0.020)
Arthritis	-0.435***	-0.451***	-0.343***	-0.477***	-0.515***	-0.447***
	(0.030)	(0.015)	(0.021)	(0.024)	(0.012)	(0.020)
Psychiatric	-0.419***	-0.488***	-0.355***	-0.478***	-0.441***	-0.363***
	(0.043)	(0.023)	(0.031)	(0.025)	(0.015)	(0.025)
Lung disease	-0.652***	-0.570***	-0.729***	-0.468***	-0.514***	-0.323***
	(0.047)	(0.027)	(0.053)	(0.031)	(0.020)	(0.043)
Stroke	-0.294***	-0.457***	-0.663***	-0.347***	-0.460***	-0.805***
	(0.055)	(0.033)	(0.055)	(0.041)	(0.029)	(0.071)
Heart attack	-0.654***	-0.633***	-0.607***	-0.378***	-0.549***	-0.431***
	(0.087)	(0.050)	(0.084)	(0.080)	(0.060)	(0.159)
N	5777	18756	9238	9199	29905	9682

Table A7: HRS IV Regression First Stage (with initial conditions)

	Men			Women		
	High School Dropout	High School	College	High School Dropout	High School	College
Chronic illnesses						
Cancer	-0.386***	-0.269***	-0.320***	-0.130***	-0.212***	-0.236***
	(0.051)	(0.025)	(0.033)	(0.035)	(0.018)	(0.030)
Diabetes	-0.314***	-0.373***	-0.451***	-0.379***	-0.382***	-0.390***
	(0.032)	(0.019)	(0.026)	(0.024)	(0.016)	(0.031)
Poor eyesight	-0.502***	-0.655***	-0.760***	-0.442***	-0.620***	-0.569***
	(0.051)	(0.042)	(0.081)	(0.035)	(0.030)	(0.084)
Poor hearing	0.098	-0.010	-0.106**	-0.124*	-0.103***	-0.115*
	(0.065)	(0.030)	(0.043)	(0.075)	(0.036)	(0.059)
High blood pressure	-0.286***	-0.241***	-0.241***	-0.297***	-0.249***	-0.307***
	(0.029)	(0.015)	(0.019)	(0.023)	(0.012)	(0.020)
Arthritis	-0.435***	-0.451***	-0.343***	-0.477***	-0.515***	-0.447***
	(0.030)	(0.015)	(0.021)	(0.024)	(0.012)	(0.020)
Psychiatric	-0.419***	-0.488***	-0.355***	-0.478***	-0.441***	-0.363***
	(0.043)	(0.023)	(0.031)	(0.025)	(0.015)	(0.025)
Lung disease	-0.652***	-0.570***	-0.729***	-0.468***	-0.514***	-0.323***
	(0.047)	(0.027)	(0.053)	(0.031)	(0.020)	(0.043)
Stroke	-0.294***	-0.457***	-0.663***	-0.347***	-0.460***	-0.805***
	(0.055)	(0.033)	(0.055)	(0.041)	(0.029)	(0.071)
Heart attack	-0.654***	-0.633***	-0.607***	-0.378***	-0.549***	-0.431***
	(0.087)	(0.050)	(0.084)	(0.080)	(0.060)	(0.159)
N	5777	18756	9238	9199	29905	9682

4 Additional estimation results

4.1 Robustness to use of ADL measures

Table A8: Share of Employment Decline Explained by Subjective Health and Cognition - Subjective Health Instrumented using Objective Health, Including ADL measures

	Men		Women	
	ELSA	HRS	ELSA	HRS
Panel A: Subjective health				
High School Dropout	.093***	.142***	.062***	.140***
	(.023)	(.023)	(.016)	(.023)
High School	.062***	.128***	.078***	.153***
	(.015)	(.010)	(.018)	(.011)
College	.051***	.131***	.038***	.102***
	(.017)	(.018)	(.014)	(.017)
Panel B: Subjective health and cognition				
High School Dropout	.092***	.159***	.061***	.149***
	(.023)	(.023)	(.016)	(.023)
High School	.061***	.137***	.079***	.161***
	(.015)	(.011)	(.014)	(.011)
College	.053***	.142***	.040***	.106***
	(.018)	(.017)	(.014)	(.017)
Sample sizes	4,692	5,777	6,957	9,199
	6,326	18,756	7,911	29,905
	3,362	9,238	2,759	9,682

Notes: All estimates include age, age squared, wave dummies and initial conditions. Standard errors are bootstrapped with 500 repetitions. * indicates significant at 10%,** 5%, *** 1%.

4.2 Factor analysis

Table A9: Coefficient Estimates, Cognition and Subjective Health

	Men				Women			
	ELSA		HRS		ELSA		HRS	
	No IC's	IC's	No IC's	IC's	No IC's	IC's	No IC's	IC's
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Panel A: Employment on Subjective Health								
High School Dropout	.196***	.102***	.207***	.150***	.132***	.061***	.170***	.139***
	(.006)	(.007)	(.005)	(.006)	(.005)	(.005)	(.004)	(.005)
High School	.119***	.056***	.170***	.119***	.122***	.071***	.145***	.116***
	(.006)	(.006)	(.003)	(.004)	(.005)	(.005)	(.002)	(.003)
College	.079***	.052***	.107***	.080***	.073***	.050***	.092***	.082***
	(.008)	(.008)	(.005)	(.005)	(.009)	(.009)	(.005)	(.005)
Panel B: Employment on Cognition								
High School Dropout	.088***	.015**	.085***	.039***	.056***	.013**	.071***	.037***
	(.006)	(.007)	(.006)	(.007)	(.005)	(.005)	(.004)	(.005)
High School	.033***	.012**	.068***	.031***	.031***	.006	.062***	.031***
	(.006)	(.005)	(.003)	(.004)	(.005)	(.005)	(.003)	(.003)
College	.013*	.002	.050***	.033***	.018**	-.002	.029***	.019***
	(.007)	(.008)	(.005)	(.005)	(.009)	(.008)	(.005)	(.005)
Panel C: Employment on Cognition and Subjective Health								
Cognition								
High School Dropout	.037***	.002	.042***	.023***	.025***	.005	.031***	.016***
	(.006)	(.007)	(.006)	(.006)	(.005)	(.005)	(.004)	(.005)
High School	.010*	.006	.035***	.018***	.008*	-.001	.030***	.017***
	(.006)	(.005)	(.003)	(.004)	(.005)	(.005)	(.003)	(.003)
College	-.001	-.004	.032***	.023***	.005	-.006	.015***	.009*
	(.007)	(.008)	(.004)	(.005)	(.008)	(.008)	(.005)	(.005)
Subjective Health								
High School Dropout	.186***	.102***	.198***	.148***	.126***	.060***	.163***	.137***
	(.006)	(.007)	(.005)	(.006)	(.005)	(.006)	(.004)	(.005)
High School	.117***	.055***	.163***	.116***	.121***	.071***	.139***	.114***
	(.006)	(.006)	(.003)	(.004)	(.005)	(.005)	(.003)	(.003)
College	.079***	.053***	.101***	.077***	.072***	.050***	.089***	.081***
	(.008)	(.008)	(.005)	(.005)	(.009)	(.009)	(.005)	(.005)
Sample sizes	4,692	4,692	5,777	5,777	6,957	6,957	9,199	9,199
	6,327	6,327	18,756	18,756	7,911	7,911	29,905	29,905
	3,362	3,362	9,238	9,238	2,759	2,759	9,682	9,682

Notes: regression results using subjective health and cognition generated from factor analysis.

Table A10: Share of Employment Decline, Cognition and Subjective Health

	Men		Women	
	ELSA	HRS	ELSA	HRS
Panel A: Subjective Health				
High School Dropout	.091***	.133***	.049***	.106***
	(.016)	(.018)	(.008)	(.017)
High School	.051***	.126***	.055***	.117***
	(.009)	(.009)	(.008)	(.006)
College	.046***	.100***	.026***	.082***
	(.013)	(.013)	(.008)	(.011)
Panel B: Cognition				
High School Dropout	.002	.035***	-.002	.049***
	(.003)	(.009)	(.002)	(.010)
High School	0.000	.026***	0.000	.027***
	(.001)	(.005)	(.001)	(.004)
College	0.000	.034***	0.000	.013**
	(.002)	(.008)	(.002)	(.007)
Panel C: Cognition and Subjective Health				
High School Dropout	.091***	.154***	.049***	.126***
	(.016)	(.020)	(.008)	(.019)
High School	.051***	.140***	.055***	.129***
	(.009)	(.010)	(.008)	(.007)
College	.048***	.121***	.027***	.085***
	(.013)	(.014)	(.009)	(.012)
Sample sizes	4,692	5,777	6,957	9,199
	6,327	18,756	7,911	29,905
	3,362	9,238	2,759	9,682

Notes: δ estimates using subjective health and cognition generated from factor analysis.

4.3 Sensitivity of IV and OLS estimates to different sets of instruments

Although our objective measures are based on external diagnosis carried out by health professionals, they are still sensitive to justification bias in the sense that individuals choose whether to seek medical attention and, for a similar set of symptoms, this choice may be related to employment. To assess the sensitivity of our results to the assumption that justification bias does not affect objective health measures, we re-estimate the health effects using a more restricted set of instruments. Estimates are shown in Table A11 and percent differences and p-values for comparison with estimates in Panel A of Table 10 in the main text are shown in Table A12.

Table A11: Share of Employment Decline Explained by Subjective Health - Subjective Health Instrumented using Subsets of Objective Health Measures

	Men		Women	
	ELSA	HRS	ELSA	HRS
Panel A: Cancer, Stroke, Heart, Diabetes, Lung Disease				
High School Dropout	.075***	.125***	.054***	.142***
	(.025)	(.026)	(.019)	(.025)
High School	.087***	.119***	.034**	.138***
	(.024)	(.014)	(.017)	(.014)
College	.044	.150***	.048*	.131***
	(.030)	(.027)	(.027)	(.028)
Panel B: Cancer, Stroke, Heart				
High School Dropout	.082***	.110***	.030	.138***
	(.031)	(.028)	(.026)	(.031)
High School	.090***	.166***	.035	.153***
	(.027)	(.021)	(.024)	(.018)
College	.007	.231***	.021	.142***
	(.046)	(.039)	(.030)	(.040)

Notes: All estimates include age, age squared, wave dummies and initial conditions. Standard errors are bootstrapped with 500 repetitions. * indicates significant at 10%,** 5%, *** 1%.

Table A12: Percent Differences in the Explained Share of Employment Decline and *p*-values for Testing Null of No Differences – Comparing Tables 10 and A11

	Percent differences				*p*-values			
	Men		Women		Men		Women	
	ELSA	HRS	ELSA	HRS	ELSA	HRS	ELSA	HRS
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Panel B of Table 10 vs. Panel B of Table A11								
High School Dropout	-18.7	-14.9	4.0	-0.2	0.298	0.274	0.466	0.497
High School	55.5	-4.5	-39.6	-1.2	0.143	0.380	0.159	0.461
College	-23.1	0.4	57.3	27.7	0.362	0.493	0.283	0.206
Panel B of Table 10 vs. Panel B of Table A11								
High School Dropout	-11.4	-25.4	-42.6	-2.9	0.388	0.167	0.230	0.460
High School	62.2	33.5	-38.9	10.2	0.136	0.043	0.224	0.243
College	-88.5	55.2	-31.4	37.9	0.167	0.033	0.388	0.192

Notes: Estimates of relative differences in Columns 1-4 compare figures in Panels A and C of Table 10 with those in Panels A and B of Table A11, with Table 10 as the baseline. $p-$values in Columns 5-8 for testing the equality of the same δ estimates.

We found no statistical significant differences between our estimates in Table 10 and the new estimates using the larger 5 conditions set of instruments (see Panel A of both tables). When we further exclude diabetes and lung disease from the set of instruments, the new estimates continue to show little sign of being statistically different from those in Table 10. The two exceptions are for men in the HRS, but even in these two cases the percent difference estimates are small (columns 2 and 6 of Panel B, Table A12). We conclude that restricting the set of instruments to a smaller,

more demanding set induces only small changes is estimates and does not alter our conclusions about the magnitude of the effect of health on employment.

Table 8 shows OLS estimates using different subjective measures. The top panel shows estimates using the "health limits work" measure. This panel is the same as Panel C of Table 8 of the main text. Panels B and C of Table 8 show estimates using our other two subjective measures. Of the three health measures, estimates using "self reported health" are usually the smallest. Estimates using "health limits work" tend to be the largest in the HRS, whereas estimates using "health limits activities" tends to be largest using ELSA. Importantly, however, all three measures deliver smaller and more variable estimates than when using our principal components measure. This highlights the value of using our principal components approach.

Table A13: Share of Employment Decline Explained by Subjective Health - Various Specifications

	Men		Women	
	ELSA	HRS	ELSA	HRS
Panel A: Health limits work				
High School Dropout	.036***	.092***	.015**	.110***
	(.013)	(.019)	(.007)	(.017)
High School	.023***	.118***	.022***	.131***
	(.007)	(.009)	(.007)	(.007)
College	-.003	.085***	.004	.079***
	(.008)	(.012)	(.007)	(.011)
Panel B: Health limits activities				
High School Dropout	.089***	.019***	.048***	.024***
	(.014)	(.004)	(.008)	(.004)
High School	.046***	.024***	.052***	.027***
	(.010)	(.002)	(.008)	(.002)
College	.042***	.015***	.041***	.014***
	(.015)	(.002)	(.012)	(.002)
Panel C: Self reported health				
High School Dropout	.015*	.040***	.008**	.047***
	(.009)	(.009)	(.004)	(.009)
High School	.005	.033***	.007**	.031***
	(.003)	(.004)	(.003)	(.004)
College	.009	.014***	.001	.012***
	(.005)	(.004)	(.002)	(.004)
Sample sizes	4,692	5,777	6,957	9,199
	6,327	18,756	7,911	29,905
	3,362	9,238	2,759	9,682

Notes: All estimates include age, age squared, wave dummies and initial conditions. Standard errors are bootstrapped with 500 repetitions. * indicates significant at 10%,** 5%, *** 1%.

4.4 Robustness of δ estimates to use of Linear Probability Model

Table A14: Share of Employment Decline Explained by Cognition and Subjective Health (LPM version of Table 6)

	Men		Women	
	ELSA	HRS	ELSA	HRS
Panel A: Subjective Health				
High School Dropout	.086***	.134***	.048***	.111***
	(.015)	(.019)	(.008)	(.016)
High School	.047***	.123***	.053***	.120***
	(.009)	(.007)	(.008)	(.007)
College	.045***	.096***	.025***	.082***
	(.012)	(.011)	(.009)	(.010)
Panel B: Cognition				
High School Dropout	.002	.033***	-.003	.057***
	(.003)	(.010)	(.002)	(.011)
High School	.001	.029***	0.000	.034***
	(.002)	(.004)	(.001)	(.005)
College	0.000	.037***	0.000	.019***
	(.002)	(.008)	(.002)	(.006)
Panel C: Cognition and Subjective Health				
High School Dropout	.086***	.152***	.046***	.133***
	(.015)	(.020)	(.008)	(.017)
High School	.047***	.138***	.053***	.136***
	(.009)	(.008)	(.008)	(.008)
College	.046***	.117***	.026***	.091***
	(.013)	(.013)	(.009)	(.012)
Sample sizes	4,692	5,777	6,957	9,199
	6,327	18,756	7,911	29,905
	3,362	9,238	2,759	9,682

Notes: All estimates include age, age squared, wave dummies and initial conditions. Standard errors are bootstrapped with 500 repetitions. * indicates significant at 10%,** 5%, *** 1%.

Table A15: Share of Employment Decline Explained by Subjective Health - Various Specifications (LPM version of Table 8)

	Men		Women	
	ELSA	HRS	ELSA	HRS
Panel A: First principal component				
High School Dropout	.086***	.134***	.048***	.111***
	(.016)	(.016)	(.008)	(.017)
High School	.047***	.123***	.053***	.120***
	(.008)	(.007)	(.007)	(.007)
College	.045***	.096***	.025***	.082***
	(.012)	(.013)	(.008)	(.010)
Panel B: Three subjective measures separately				
High School Dropout	.072***	.119***	.034***	.116***
	(.017)	(.019)	(.010)	(.018)
High School	.036***	.128***	.043***	.135***
	(.012)	(.009)	(.009)	(.007)
College	.013	.095***	.032***	.086***
	(.014)	(.015)	(.011)	(.011)
Panel C: Health limits work				
High School Dropout	.036***	.092***	.015**	.110***
	(.013)	(.019)	(.007)	(.017)
High School	.023***	.118***	.022***	.131***
	(.007)	(.009)	(.007)	(.007)
College	-.003	.085***	.004	.079***
	(.008)	(.012)	(.007)	(.011)
Sample sizes	4,692	5,777	6,957	9,199
	6,327	18,756	7,911	29,905
	3,362	9,238	2,759	9,682

Notes: All estimates include age, age squared, wave dummies and initial conditions. Standard errors are bootstrapped with 500 repetitions. * indicates significant at 10%,** 5%, *** 1%.

Table A16: Share of Employment Decline Explained by Subjective Health and Cognition - Subjective Health Instrumented using Objective Health (LPM version of Table 10)

	Men		Women	
	ELSA	HRS	ELSA	HRS
Panel A: Subjective health				
High School Dropout	.094***	.146***	.054***	.142***
	(.023)	(.025)	(.013)	(.023)
High School	.054***	.125***	.060***	.142***
	(.015)	(.011)	(.014)	(.012)
College	.058***	.147***	.031**	.109***
	(.020)	(.023)	(.015)	(.020)
Panel B: Subjective health and cognition				
High School Dropout	.094***	.158***	.054***	.153***
	(.023)	(.024)	(.014)	(.023)
High School	.054***	.135***	.060***	.152***
	(.015)	(.012)	(.014)	(.012)
College	.060***	.159***	.032**	.112***
	(.021)	(.022)	(.015)	(.019)

Notes: All estimates include age, age squared, wave dummies and initial conditions. Standard errors are bootstrapped with 500 repetitions. * indicates significant at 10%,** 5%, *** 1%.

4.5 Overidentification tests with different health variables

Table A17: Overidentification Test

	Men		Women	
	ELSA	HRS	ELSA	HRS
	[1]	[2]	[3]	[4]
Panel A: Subjective Health				
High School Dropout	0.221	0.217	0.134	0.001
High School	0.106	0.000	0.284	0.000
College	0.280	0.000	0.093	0.000
Panel B: Subjective Health, with Cognition				
High School Dropout	0.203	0.238	0.136	0.001
High School	0.110	0.000	0.290	0.000
College	0.283	0.000	0.079	0.000
Panel C: Subjective Health, with Cognition and 2nd Component				
High School Dropout	0.282	0.237	0.191	0.002
High School	0.785	0.000	0.213	0.000
College	0.239	0.000	0.361	0.093
Panel D: Subjective Health, subset of measures				
High School Dropout	0.324	0.076	0.418	0.101
High School	0.977	0.014	0.283	0.261
College	0.366	0.000	0.692	0.017
Panel E: Subjective Health, subset of measures with Cognition				
High School Dropout	0.323	0.077	0.417	0.095
High School	0.979	0.027	0.288	0.285
College	0.364	0.000	0.676	0.017

Notes: Table compares F-Statistic to χ^2 Critical Values.
Checks mean that we do not reject the null of no statistical relationship
between our objective measures and the IV residuals, crosses mean
that we do reject the null.

5 Oaxaca Decomposition

Employment on health only   The effect is $\delta = \frac{\beta \Delta H}{\Delta Y}$. The difference is (subscripts US and E stand for US and England, respectively):

$$
\begin{aligned}
\delta_{US} - \delta_E &= \frac{\beta_{US}\Delta H_{US}}{\Delta Y_{US}} - \frac{\beta_E \Delta H_E}{\Delta Y_E} \\
&= \frac{\Delta H_{US}}{\Delta Y_{US}}\left(\beta_{US} - \beta_E\right) + \beta_E\left(\frac{\Delta H_{US}}{\Delta Y_{US}} - \frac{\Delta H_E}{\Delta Y_E}\right) \\
&= \frac{\Delta H_{US}}{\Delta Y_{US}}\left(\beta_{US} - \beta_E\right) + \beta_E\left[\frac{1}{\Delta Y_{US}}\left(\Delta H_{US} - \Delta H_E\right) + \Delta H_E\left(\frac{1}{\Delta Y_{US}} - \frac{1}{\Delta Y_E}\right)\right] \\
&= \underbrace{\frac{\Delta H_{US}}{\Delta Y_{US}}\left(\beta_{US} - \beta_E\right)}_{\text{variation in parameter}} + \underbrace{\beta_E\frac{1}{\Delta Y_{US}}\left(\Delta H_{US} - \Delta H_E\right)}_{\text{variation in health}} + \underbrace{\beta_E\Delta H_E\left(\frac{1}{\Delta Y_{US}} - \frac{1}{\Delta Y_E}\right)}_{\text{variation in employment}}
\end{aligned}
$$

variation in health relative to employment

Employment on health and cognition The effect is $\delta = \frac{\beta \Delta H}{\Delta Y} + \frac{\gamma \Delta C}{\Delta Y}$ and the difference is

$$
\begin{aligned}
\delta_{US} - \delta_E &= \left(\frac{\beta_{US} \Delta H_{US}}{\Delta Y_{US}} + \frac{\gamma_{US} \Delta C_{US}}{\Delta Y_{US}} \right) - \left(\frac{\beta_E \Delta H_E}{\Delta Y_E} + \frac{\gamma_E \Delta C_E}{\Delta Y_E} \right) \\
&= \frac{\Delta H_{US}}{\Delta Y_{US}} (\beta_{US} - \beta_E) + \frac{\Delta C_{US}}{\Delta Y_{US}} (\gamma_{US} - \gamma_E) + \beta_E \left(\frac{\Delta H_{US}}{\Delta Y_{US}} - \frac{\Delta H_E}{\Delta Y_E} \right) \\
&\quad + \gamma_E \left(\frac{\Delta C_{US}}{\Delta Y_{US}} - \frac{\Delta C_E}{\Delta Y_E} \right) \\
&= \frac{\Delta H_{US}}{\Delta Y_{US}} (\beta_{US} - \beta_E) + \frac{\Delta C_{US}}{\Delta Y_{US}} (\gamma_{US} - \gamma_E) \\
&\quad + \beta_E \left[\frac{1}{\Delta Y_{US}} (\Delta H_{US} - \Delta H_E) + \Delta H_E \left(\frac{1}{\Delta Y_{US}} - \frac{1}{\Delta Y_E} \right) \right] \\
&\quad + \gamma_E \left[\frac{1}{\Delta Y_{US}} (\Delta C_{US} - \Delta C_E) + \Delta C_E \left(\frac{1}{\Delta Y_{US}} - \frac{1}{\Delta Y_E} \right) \right] \\
&= \underbrace{\left[\frac{\Delta H_{US}}{\Delta Y_{US}} (\beta_{US} - \beta_E) + \frac{\Delta C_{US}}{\Delta Y_{US}} (\gamma_{US} - \gamma_E) \right]}_{\text{variation in parameters}} \\
&\quad + \underbrace{\frac{1}{\Delta Y_{US}} \left[\beta_E (\Delta H_{US} - \Delta H_E) + \gamma_E (\Delta C_{US} - \Delta C_E) \right]}_{\text{variation in health+cognition}} \Bigg\} \ * \\
&\quad + \underbrace{(\beta_E \Delta H_E + \gamma_E \Delta C_E) \left(\frac{1}{\Delta Y_{US}} - \frac{1}{\Delta Y_E} \right)}_{\text{variation in employment}}
\end{aligned}
$$

* Variation in health + cognition relative to employment.