

institute of  
Health Policy  
& Management

# Will you still need me, Will you still feed me When I'm 64?

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The Erasmus University logo, featuring the word "Erasmus" in a white, cursive script font.

Netspar project: “Optimal saving and insurance for old age: the role of long-term care insurance”

Kick-off meeting 11 November at new CPB location in The Hague, see Netspar website for details

The Erasmus logo, featuring the word "Erasmus" in a stylized, cursive script.

## Going formal or informal?

- Home production;
- Labor market;
- Leisure time.

## Costs of informal care are high

- 17%-43% of the population in OECD countries says they are a caregiver (OECD 2011);
- Median supply: 9 hours per week;
- Implicit costs of informal care for patients with dementia in the last 5 years of life in the US: \$83,022 (29% of total) (Kelley et al. 2015).

## Opportunity costs

- Caregiving is known to have effects on:
  - Physical health (Do et al. 2013);
  - Mental health (Coe and van Houtven 2009; Schmitz and Westphal 2015);
  - Prescription drug use (van Houtven et al. 2005, Schmitz and Stroka 2013).
- Often the focus is on immediate effects, but effects appear to persist:
  - Earnings/wealth (Skira 2012);
  - Mental health (Schmitz and Westphal 2015).

## What is the impact of caregiving on the caregiver's health?

- Focus on spouses (31.6% of all caregivers – OECD 2011);
- Focus on health:
  - Care recipients are often retired, as are their spouses;
  - Transfers (from the recipient or the government) cannot make up for a health loss.

## Tackling selection bias: matching.

- Finding similar observations with a different treatment status;
- Combination of exact matching on most crucial variables and propensity score.

Main assumptions:

- Conditional independence  
→ Matching particularly interesting if much relevant background information is available.
- Outcome does not depend on treatment assignment of other individuals.  
→ Analyze males and females separately.

## Survey on Health, Aging and Retirement in Europe (SHARE)

- Waves 1, 2, 4 and 5 (2004-2013);
- 11 countries participated in all waves;
- One main respondent per household, but his/her spouse is usually interviewed as well;
- All data used in this analysis is self-reported;

## Data on caregiving and health

### Caregiving:

- Help with personal care, e.g. washing, getting out of bed or dressing;
- Daily or almost daily for  $\geq 3$  months in the last 2 years;

### Health:

- Mental health (EURO-D);
- Self-perceived health (5-point scale).

### Health care use:

- Prescription drug use;
- Doctor visits.

## Determinants of informal caregiving

Characteristics related to caregiving and health may be split in 3 categories (Schmitz and Westphal 2015 JHE):

- Need for care;
  - Ability to provide care;
  - Willingness to provide care.
- 
- SHARE data is unique in that for all three categories good information, or at least credible proxies, appear available.

## Additional problem: reverse causality

- Make use of panel structure  
→ Control variables taken from prior wave.
- Wave 1 (t-2): covariates;
- Wave 2 (t=0): treatment status;
- Wave 2, 4, 5 (t=0, t+4, t+7): outcomes.

## Additional problem: persistence in caregiving

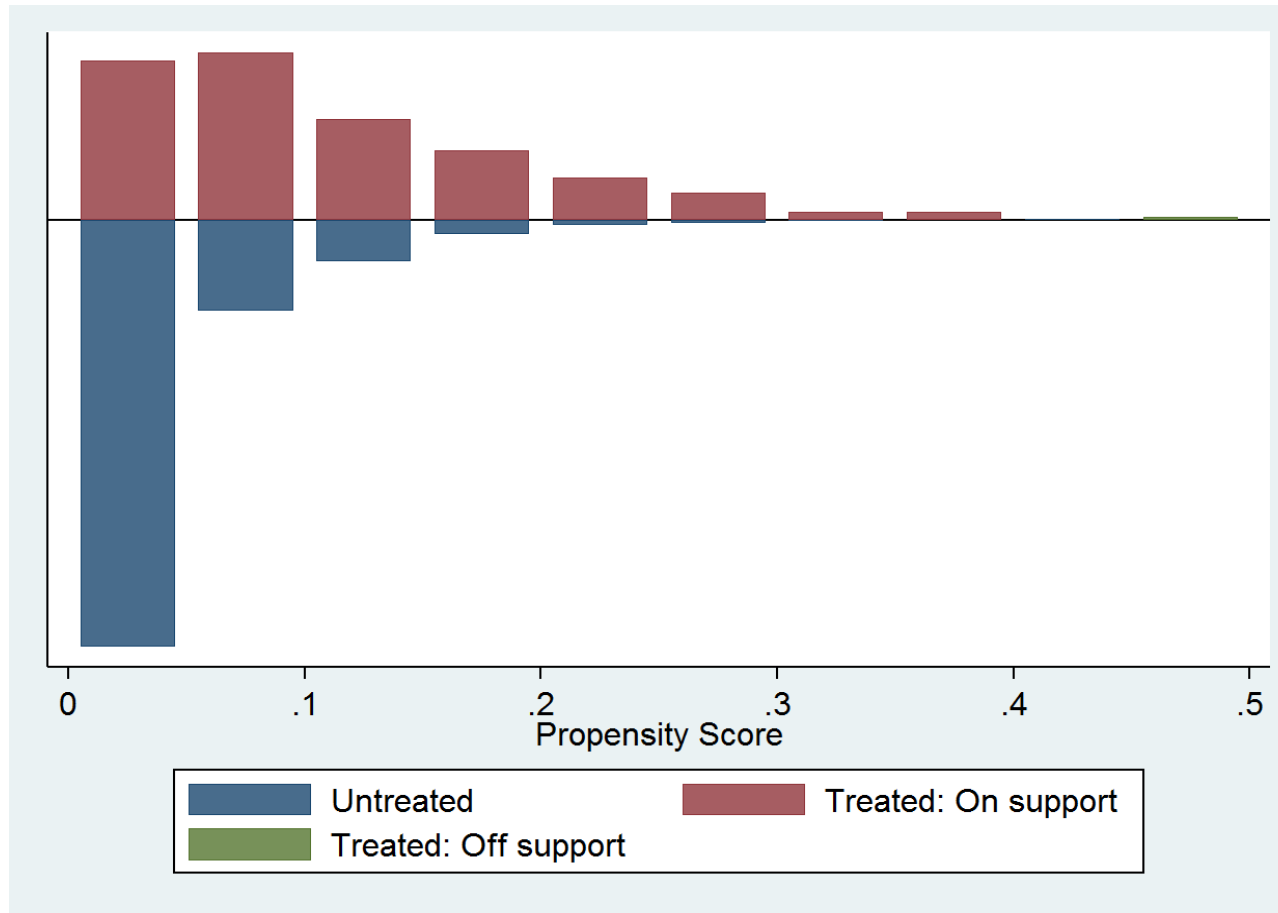
Make use of panel structure → Select using caregiving status in prior wave

	<b>2004 (t-2)</b>	<b>2006 (t=0)</b>	<b>2010 (t+4)</b>	<b>2013 (t+7)</b>
Treatment group (n= 404)	0	1	X	X
Control group (n= 9889)	0	0	X	X
Removed	1	X	X	X

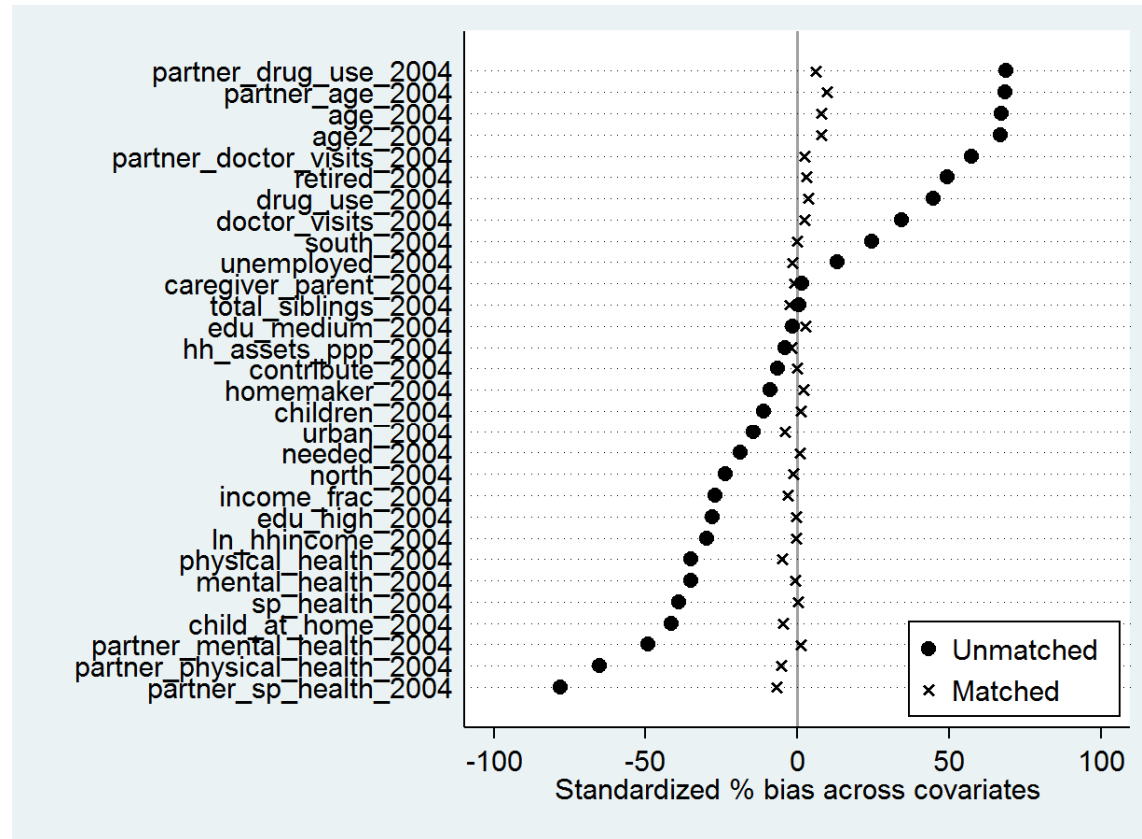
## Descriptives and propensity scores: evidence of selection

- Propensity scores highlight the importance of:
  - Need for care (partner's age and health);
  - Public arrangements (country dummies);
  - Interaction with labor market status.

## Who is in?



# Matching quality



*Erasmus*

## Main findings: health

	Mental health		Self-reported health	
	Females	Males	Females	Males
Immediate	-0.582*** (0.158)	-0.454** (0.162)	-0.207*** (0.061)	-0.159* (0.069)
4 years	0.104 (0.179)	0.208 (0.177)	0.011 (0.072)	0.071 (0.088)
7 years	0.117 (0.196)	-0.184 (0.229)	0.005 (0.075)	0.016 (0.097)

## Main findings: health care use

	Prescription drug use		Doctor visits	
	Females	Males	Females	Males
Immediate	0.062** (0.019)	-0.001 (0.023)	1.427** (0.471)	0.629 (0.499)
4 years	0.012 (0.024)	-0.019 (0.033)	0.152 (0.512)	0.955 (0.642)
7 years	0.044* (0.020)	-0.019 (0.035)	-1.349* (0.579)	1.150 (0.767)

## Attrition is a major issue...

		<b>Total</b>	<b>Treated</b>	
			Matched	Off support
Males	T=0	5,185	185	0
	T=4	2,957	96	2
	T=7	2,576	76	1
Females	T=0	5,108	219	1
	T=4	3,025	133	0
	T=7	2,653	114	0

## ...Is it likely to affect the estimates?

- Results for females (similar pattern for males):

	Full sample	Present in waves 4 and 5
Mean propensity in 2006	0.043	0.040
Mental health	-0.582*** (0.158)	-0.516* (0.234)
Self-reported health	-0.207*** (0.061)	-0.141 (0.079)
Prescription drug use	0.062** (0.019)	0.053* (0.026)
Doctor visits	1.427** (0.471)	0.546 (0.636)
Number of observations	5,103	2,292

## Discussion

- Evidence for substantial short-term health effects of caregiving.
- No evidence of long-run effects, but selective attrition may lead to biased estimates.
- Next up → Linking survey data on caregiving with administrative data on outcomes?

## Discussion

- Informal care is free, but not without opportunity costs;
- No insurance against the (financial) consequences of having to provide informal care;
- No compensation for negative health effects;
- Selection suggests it likely increases inequity in health;