

The effect of grandparenthood on older people's cognitive functioning:

Does it matter what grandparents and grandchildren do together?

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Background

- Widespread increased longevity and decreased fertility
 - “Long and thin” family structure (BENGTSON 2001)
- Challenges and **opportunities** for individual, family, society
 - **>50%** grandparents provide grandchild care (GLASER et al. 2010; HANK & BUBER 2009)
- With **positive** effects for grandchildren, mothers & **grandparents** (DI GESSA et al. 2016; BORDONE & ARPINO 2016; ARPINO et al. 2018)
 - Better cognitive functioning
 - For both men and women
 - Independently from intensity
 - Significant only on verbal fluency

Predictor/Intensity of grandparenting	n	OLS	2SLS
<i>Verbal fluency</i>			
Low	4,024	0.30	1.03*
Medium	4,176	0.40	1.03**
High	4,106	0.69**	1.41***

Source: ARPINO & BORDONE 2014 (JMF) – SHARE Data

Research question

- What is the effect of **grandchild care** on grandparents' cognitive functioning?
 - Does it matter **what** grandparents and grandchildren do together?



Source: Google Images

Data

- English Longitudinal Study of Ageing (ELSA) – waves 7 and 8
 - **Grandchild care** (Yes/No)
 - **Activities** with grandchildren:
 - Stay overnight without parents; Look after when they are ill; Play/leisure activities; Prepared meals; **Help with homework**; Took to/collect from nursery, playgroup or school; Just around in case they needed anything
 - **Frequency** (frequently, occasionally, rarely or none)
- Sample selection (N = 1,993 Women; 1,430 Men)
 - At least 1 child, 50-80, interviewed in both waves
 - Excluding: Co-resident grandchild-grandparent, permanently sick or disabled, outliers for outcomes and missing (RC)

ELSA

Dependent variables: Cognitive tests in ELSA



- Memory
 - Immediate recall
 - Delayed recall

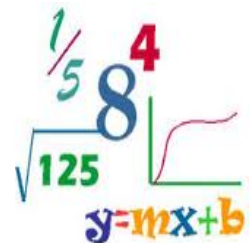
The interviewer reads a **list of 10 common words** & asks R to recall aloud as many as possible (2 minutes)

- right after (immediate recall)
- a little while after (delayed recall)



- Fluency

Name as many different animals as R can think of (1 minute)



- Numeracy

Involve solving simple **mathematical problems**. *Example:* One hundred minus 7 equals what?

Method

- For each measure of cognitive functioning we estimate 3 **linear regression models**, by gender
 - *Model 1:*
 - Grandchild care vs. no grandchild **care**
 - *Model 2 (among care providers):*
 - Help vs. no help with **homework**
 - *Model 3 (among those who help with homework):*
 - **Frequent** vs. occasional involvement
- In all models the reference category is “no grandchild care”

Control variables

- Sociodemographic variables
 - Age, education, marital status
- Activity status (employed; retired; other)
- Participation in social activities (=1 R was involved almost daily in at least one social activity; =0 otherwise)
- All control variables were measured at the **baseline** (wave 7)
- To reduce risk of reverse causality we included **cognitive** tests measured at **baseline**

Average immediate recall scores



	Any	Frequently	Occasionally	Rarely	N
Not a grandparent	6.68				1,215
No care provided	5.88				1,353
Care provided by type					
Just been around	6.44	6.40	6.52	6.54	1,422
Helped with homework	6.50	6.56	6.49	6.45	940
Cared when sick	6.51	6.24	6.49	6.64	843
Leisure activities	6.51	6.48	6.51	6.65	1,939
Prepared meals	6.48	6.44	6.56	6.34	1,821
Collected from nursery	6.49	6.39	6.60	6.48	1,312
Stayed overnight	6.44	6.36	6.49	6.38	1,566

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GM who provide grandchild care score, on average, significantly **better at follow-up**, controlling for cognition at baseline.

For **GF** we confirm a positive effect on **verbal** fluency.

Results

	Verbal		Numeracy		Immediate recall		Delayed recall	
	GF	GM	GM	GF	GM	GF	GM	GF
M1								
grandchild care	0.69** (0.28)	1.64*** (0.26)	-0.03 (0.09)	0.20** (0.09)	0.07 (0.08)	0.15** (0.07)	0.07 (0.09)	0.35*** (0.08)

GM: positive effect **confirmed** for both groups (except numeracy).
Stronger effects for GM helping with homework.

GF: positive effect on fluency **confirmed** for both groups. Helping with **homework** has a positive effect also on immediate recall.

Results

	Verbal		Numeracy		Immediate recall		Delayed recall	
	GF	GM	GM	GF	GM	GF	GM	GF
M1								
grandchild care	0.69** (0.28)	1.64*** (0.26)	-0.03 (0.09)	0.20** (0.09)	0.07 (0.08)	0.15** (0.07)	0.07 (0.09)	0.35*** (0.08)
M2								
gc - no homework	0.51* (0.31)	1.44*** (0.28)	-0.06 (0.09)	0.15 (0.09)	0.01 (0.08)	0.14* (0.07)	0.09 (0.09)	0.33*** (0.09)
gc – homework	1.09*** (0.38)	2.00*** (0.32)	0.03 (0.12)	0.29*** (0.11)	0.21** (0.10)	0.19** (0.09)	0.02 (0.12)	0.37*** (0.10)

No clear pattern.

GM: frequent engagement not always has stronger effect.

GF: only occasional involvement is positive.

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gc – homework	1.09*** (0.38)	2.00*** (0.32)	0.03 (0.12)	0.29*** (0.11)	0.21** (0.10)	0.19** (0.09)	0.02 (0.12)	0.37*** (0.10)
M3								
gc - no hw	0.52* (0.31)	1.44*** (0.28)	-0.06 (0.09)	0.15 (0.09)	0.01 (0.08)	0.14* (0.07)	0.09 (0.09)	0.33*** (0.09)
gc - hw occasional	1.63*** (0.44)	2.01*** (0.37)	-0.02 (0.13)	0.28** (0.12)	0.24** (0.12)	0.15 (0.10)	0.03 (0.14)	0.41*** (0.12)
gc - hw frequently	-0.07 (0.59)	1.98*** (0.44)	0.14 (0.18)	0.32** (0.15)	0.15 (0.16)	0.25** (0.12)	-0.02 (0.18)	0.31** (0.14)

(Preliminary) Conclusions

- Grandchild care has **positive** effects on grandparents' cognitive functioning
 - Especially for **grandmothers** who benefit on all four tests considered
- When grandparents help their grandchildren with **homework**, the positive effects on cognition tend to be **stronger**
 - Especially on verbal fluency
- Results on the frequency of engagement are not consistent across models and outcomes

Next steps

- Consider all activities done with grandchildren
 - Playing / engaging in leisure activities with grandchildren has similar results to helping with homework
- Further explore the role of frequency of engagement





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Thank you!