

Longitudinal Psychosocial Predictors of Cognitive Function in Old Adults

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Introduction

- Independence in old age is as much determined by cognitive functioning as by physical functioning.
- Age changes in cognition – regarded as important determinant of adjustment to ageing, quality of life and survival (Allerhand, Gale, and Deary, 2014).

Introduction

- Normal cognitive changes - important to understand because:
 - they can affect an older adult's daily functioning;
 - they can help distinguish normal from disease states (Harada, Natelson Love and Triebel, 2013).

The aim

- Determine the longitudinal predictive contribution of psychosocial factors to the cognitive function in old persons.

Method: Participants

- 167 retirement homes' residents in Zagreb, Croatia, followed-up for 8 years;
 - ❖ 33 (20%) men, 134 (80%) women.
 - ❖ Age: 69-100 yrs, average 84,5 yrs
(at baseline: 62-93 yrs, average 77 yrs)
 - ❖ Mobile and not diagnosed with dementia.

Method: Procedures

- Measurement was applied three times:
 - ❖ Baseline: in 2008, and two follow-ups: in 2010 and in 2016;
 - ❖ Individually, in the form of structured interview, by trained interviewers, at retirement homes.

Method: Instruments / Variables

- Cognitive Function Scale (*CAPE, Pattie & Gilleard, 1996*),
 - *measuring: information/orientation - 12 questions, and mental ability - 4 tasks: counting, saying alphabet, reading, writing;*
 - *Score range: 0-23; >8 considerable cognitive decline; 8-15 mild decline*
- Sociodemographic (*age, sex, education*)
- Subjective health (*2-items self-perceived health scale, score 2-8*)
- Functional Ability (*ADL, 14-items scale, score 14-56*)
- Social Participation (*5-items scale, score 5-15*)
- Depression (*20-items scale, score 20-80*)

Results

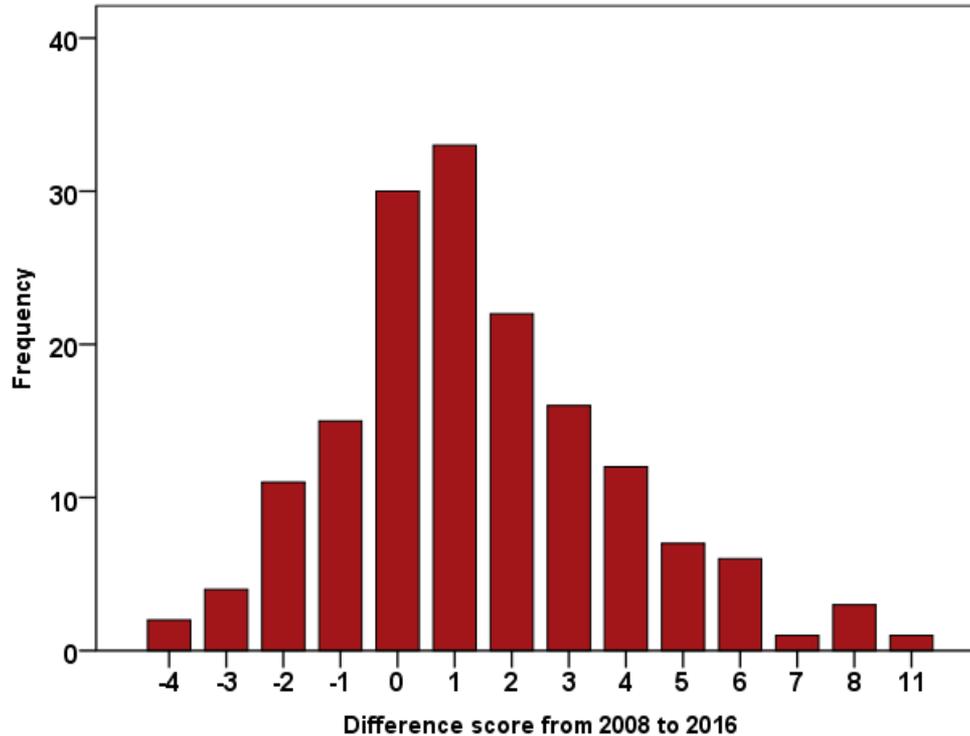
Age Changes in Cognitive Function from 2008 to 2016



Age Changes in Cognitive Function - Interpretation

- Cognitive function mildly decreased in 8 yrs:
 - In 2008: 98,8% participants with good cognitive function (1,2% mild decrease)
 - 2016. g. - 91,6% participants with good cognitive function (8,4% mild decrease)
 - $r(2008 - 2010) = .50$; $r(2008 - 2016) = .46$; $r(2010 - 2016) = .41$

Distribution of Difference in Cognitive Score 2008-2016 (Baseline score 2008 – score 2016)



Descriptive Statistics

Variables	M - 2008	M - 2010	M - 2016	Range (theor.)	
Age	76,8	78,8	84,5	62	100
Cognitive function	19,4	19,1	17,9	0	23
Self-Perceived Health	5,5	5,3	5,3	2	8
Functional Ability	48,5	46,9	41,8	14	56
Social Participation	8,3	8,4	8,0	5	15
Depression	40,5	42,0	/	20	80

Results interpretation

- Highly functional very old (M= 84,5 yrs) participants!
- Age changes (expected) found in observed variables:
 - Mild decrease of physical functioning, cognitive functioning, and social functioning;
 - Mild increase of depression.

RA(hierarch.) Results: Significant Longitudinal Predictors from 2008 (Step 1) & 2010 (Step 2), of Cognitive Function in 2016

Significant Predictor Variables	β	R ²	ΔR^2
Step 1: 2008 Predictors		.37	
Age	-.26**	F(7,160)=9.63; p< .001	
Education	.29**		
Cognitive function	.26**		
Social Participation	.24**		
Step 2: 2008 & 2010 Predictors		.42	.05
Age	-.26**	F(12,155)=6.60; p< .001	
Education	.28**		
Cognitive Ability '08.	.20*		
Social Participation '08	.20*		
Functional Ability '10	.26*		

* p< .05
**p< .01

Results Interpretation

- The observed set of predictors explained 37% - 42% of the cognitive function variance in 2016. The significant longitudinal predictors were:
- **Age and education** – older age and lower education predict cognitive decline;
- **Baseline cognitive function** - positive long-term prediction of cognitive function;
- **Social participation and functional ability** – social and physical capacity positively predict cognitive function.

Discussion

- Findings in accordance with:

- The lifestyle-cognition hypothesis (Marioni, van den Hout, Valenzuela, 2012):
 - ***“Active life-style prevents age-associated cognitive decline.”***
- and vice versa:
 - Transactional model of dynamic risk - outcome relationships in successful ageing (Berg, Smith, Henry i Pearce, 2007):
 - ***“Higher cognitive function level enables more active life-style.”***

Discussion - Limitations:

- ❖ Other factors may be contributing: biological, health conditions, psychological, behaviours, etc.
- ❖ Findings restrict the generalization to higher-functioning individuals and to specific living conditions.
- ❖ Self-report measures.

Conclusion and Implications

- Higher functional level – social, physical and cognitive: significantly long-term associated with cognitive function of old persons residing at retirement homes.
- Identifying long-term predictors of cognitive changes has implications for the development of prevention strategies and interventions to delay cognitive impairment in old age and improve quality of life.



THANKS!

Any questions?

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