

Abstract for the Annual Meeting of the Gerontological Society of America, New Orleans, November 2016

Leist, A. K. (2016). Cognitive inequalities in later life: Cross-country differences in the education-cognition gradient. *The Gerontologist*, 56(Suppl. 3), 428-429.

Cognitive Inequalities in Later Life: Cross-Country Differences in the Education-Cognition Gradient

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Later-life cognitive function is intrinsically linked to amount and quality of education received in childhood and adolescence, supposedly by education increasing cognitive reserve. However early cognitive skills also determine how much schooling is received. Current methods cannot disentangle education and cognition. I propose a method to standardize education and comparatively analyze the education-cognition gradient in order to assess if *cross-country differences in later cognitive function reflect earlier educational inequalities*.

Method. 16,941 respondents to the Survey of Health, Ageing and Retirement in Europe providing at least two measurements (waves 1 to 5) from 16 countries, aged 50-59 were included. Cognitive function was an average of immediate, delayed recall and executive function. Education was standardized by logit-rank transformation, providing information on educational rank. Mixed (random-effects) models were run with covariates and education as fixed effect, random intercept and slope. Empirical Bayes predictors were estimated to investigate the education-cognition gradient.

Results. Cognitive levels were above average in most continental, northern European and some post-communist countries (Slovenia, Estonia), and below average in southern European, Poland, and Israel. Education-cognition gradients were above average in France and post-communist countries (Poland, Slovenia, Czechia), reflecting better average fit of cognitive levels with amount of schooling received. In contrast, continental European countries showed below-average gradients, i.e. higher cognitive inequalities.

Discussion. With this method, the link between education and cognition can be examined more closely. Findings reflect country differences in educational inequalities, i.e. accessibility to higher education independent of socioeconomic status, at the time when this middle-aged cohort was schooled.