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**Abstract**

**Objective.** Working-life employment gaps should be associated differently with later-life cognitive function depending on their potential to decrease or increase cognitive reserve, e.g., by cognitively stimulating activities carried out during the gap. Employment gaps due to unemployment or sickness should worsen cognitive function, whereas gaps due to training should promote cognitive function. However, the role of education in these associations remains unclear. It is hypothesized that individuals with higher cognitive reserve, i.e., higher education, suffer less from unemployment or sickness spells, but also benefit less from training spells compared to lower-educated individuals.

**Method.** Cognitive function (verbal fluency, immediate recall, delayed recall, orientation, numeracy) of 18,419 respondents aged 50-73 to the *Survey of Health, Ageing, and Retirement in Europe* of 13 countries was assessed in 2004/5 and 2006/7. Employment gaps were derived from complete work histories assessed in 2008/9. Respondents’ information on *International Standard Classification of Education* was recoded into low (< upper secondary), upper secondary, and post-secondary education.

**Results.** For low-educated individuals, employment gaps due to sickness were associated with increased risk of cognitive impairment, gaps due to training associated with decreased risk of cognitive impairment. In both low- and high-educated individuals, gaps due to maternity were associated with decreased risk of cognitive impairment. Adjustment for childhood socioeconomic status and self-rated school performance attenuated but did not eliminate associations. After adjusting for late-life socioeconomic status and health, associations held for maternity spells.

**Discussion.** Training and maternity spells seem to promote later-life cognitive function particularly in low-educated individuals.