

college education have significant direct effects on health in midlife, net of health in early adulthood. However, first-generation college graduates cultivate more psychological resilience from their educational attainment than do those with college-educated parents. That is, higher education serves as a leveler for health gaps in midlife for those with fewer resources available in early life by bolstering resilience. These results provide important insights about how early life factors play an important role in shaping successful aging processes.

LONGITUDINAL ASSOCIATION BETWEEN EDUCATION AND DISABILITY IN OLDER ADULTS LIVING IN ICELAND

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BACKGROUND: Disabilities among older adults are associated with cumulative adversities such as low socioeconomic status (SES), poor nutrition, and lack of access to medical care and education. However, there is little evidence on the long-term association between education and disability status among older adults in Iceland. The aim of the study was to examine the association between mid-life education and prevalence of disability in activities of daily living (ADL) and mobility disability in late-life using 25 years of longitudinal data. **METHODS:** A large community-based population residing in Reykjavik, Iceland participated in a longitudinal study with an average of 25 years of follow-up (N=5764, mean age 77±6 yrs, 57.7% of women) Mid-life education was categorized into 2 groups (primary and secondary versus college and university). Disability status in late life was defined with ADL and mobility disability with a binary outcome (no difficulty versus any difficulty). Logistic regression analysis was used to examine the association. **RESULTS:** After controlling for age and gender, and midlife health risk factors, those who had high education at mid-life were less likely to have ADL disability (Odds Ratio

(OR) = 0.75, 95% Confidence Interval (CI): 0.64 ~ 0.88, P < 0.001) and mobility disability (OR = 0.72, 95% CI: 0.61 ~ 0.86, P < 0.001) compared with those who had low education in mid-life. **CONCLUSION:** People with high mid-life education were less likely to have ADL and mobility disability after 25 years later.

MATHEMATICS AND RELATEDNESS: PREDICTING OPTIMAL SOCIAL ENGAGEMENT IN LATE LIFE

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Multiple causes converge for older adults to shed social relationships. Lost opportunities for social engagement are tied to weakened cognitive reserve and under-optimal aging in health and disease. For example, a woman, 75, regularly strolls with younger friends. At 80, her reduced motor fitness makes it hard to keep pace and she withdraws her participation. With same-age peers, she might continue this healthy physical and social activity a few more years by unobtrusively shortening the outing or by slowing her pace. A man, 85, loves to debate politics with family, but his turn at talks diminish: his hearing loss (sensory) prevents quick grasp of the discussion; his slower verbal fluency (cognitive) hamper quick-witted replies. Both examples illustrate that social aging is not only a property of the aging individual. Social context plays an important role. Our recently formed interdisciplinary group (geropsychiatric nurse, mathematical physicist and complexity scientist) is studying the systemic complexities of social aging with experiments and mathematical models. Our aim is to present our model and aging-focused hypotheses, as well as empirical validation in younger adults. Four key variables are group size and heterogeneity, and the strength and adaptability of social coordination. Our current results show that people coordinate better with others like them in pace, but they lose the ability to coordinate with people whose pace is different. We anticipate that our program of research will deliver evidence-based recommendations on social-engineering of activities that maximize opportunities for sustained interactions among older adults.