

The Predictive Role of Cognitive Reserve in Adulthood and Aging

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Cognitive reserve (CR) is the ability of the brain to facilitate higher cognitive performance despite significant life-related brain changes during aging. Thus, CR may play a relevant role in protecting against pathological aging. Generally, CR is estimated by questionnaires evaluating schooling, working, and leisure time. Executive functions are high-level cognitive processes (e.g., inhibition, working memory, planning, problem-solving) that are strongly associated with daily living skills. In this perspective, the present study investigates how CR differs by age and how this may predict good executive functioning (EFs).

Three hundred and sixty-four participants (range: 50-88) were selected and divided by age. After anamnestic data collection, participants were interviewed to assess CR (Cognitive Reserve Index, CRI); then, EFs (working memory, phonemic fluency, cognitive flexibility, and fluid intelligence) were assessed. Different analyses were performed. Regression analysis revealed that EFs were predicted by age, schooling, working, and leisure time ($R^2=0.10$; $p<0.001$), and mediation analysis highlighted that age is a mediator of the relationship between CR and EFs. In conclusion, CR can predict executive functioning in adulthood and aging. These findings may be useful for interventions to enhance CR across the lifespan and consequently improve executive functioning, which is critical for daily independence and successful aging.

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Ageing as a Process of Adaptation and Evolution

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Yes

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