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The relationship between multilingualism and executive function in older adults

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Abstract

This study explored the possible benefits of multilingualism for executive functioning (EF) as evidence for a bi/multilingual advantage is not yet established. Using multiple regression analyses, the aim of this study was to investigate whether proficiency in multiple languages is related to EF, namely task-switching and inhibitory control, in a sample of 50 South African older adults (aged 65 years or more), while controlling for socioeconomic status (SES) and mild cognitive impairment. Proficiency in multiple languages, as well as age of second language (L2) and third language (L3) acquisition and frequency of L2 and L3 use were measured using the Language Experience and Proficiency Questionnaire (LEAP-Q; Marian, Blumenfeld, & Kaushanskaya, 2007). The EF of task-switching was measured using the Simon task which produced variables such as response time on incongruent trials, total amount of errors, and the Simon effect. For the EF of inhibitory control, the Victoria Stroop Task (VST) was used which produced variables such as response times on the incongruent colour-word condition, number of errors made on the colour-word condition, and an interference effect. For the control variables, SES was measured using the Living Standards Measure and mild cognitive impairment was measured using the Montreal Cognitive Assessment (REF). Socioeconomic status emerged as the only significant predictor of total errors made on the Simon task, such that higher SES predicted fewer errors. In addition, L3 frequency of use was the only significant predictor of incongruent response time on the Simon task, with more frequent L3 use related to slower response times on the incongruent condition of the Simon task. This suggests that speaking a third language may add a processing cost to EF. Overall, the results of this study suggest that SES, rather than bi/multilingualism, is related to better EF in older adults. In effect, SES may be more important for cognitive reserve than bi/multilingualism in older South African adults.