Bilingualism and executive functions: The effect of age

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Keywords: Bilingualism; Executive functioning; Flexibility; Inhibition and updating

Introduction.– Numerous studies have been comparing the cognitive and executive functioning of bilingual and monolingual subjects. We have already presented former results (SOFMER 2010/2013) showing an advantage for bilinguals (adolescent/adults) in several tasks calling for the executive components according to Miyake's model (2000) and according to modality (verbal vs. non-verbal).

Aim.– Investigate the effect of age by comparing the executive functioning of bilingual and monolingual younger and older adults.

Methods.– The scores of 29 bilingual adults (19 aged from 18 to 40, 10 aged from 41 to 65) were compared to those of 30 monolingual adults matched on age and certain socio-demographic variables. Protocol: verbal and non-verbal tasks assessing the 3 components: flexibility (verbal and graphic fluencies), updating (Updating test) and inhibition (Go/noGo).

Results.– The analysis of variance with four factors (language; age; executive components; material) shows a quadruple interaction: overall, older bilinguals obtain better results than the younger ones for flexibility, updating and partly inhibition, unlike monolinguals.

Discussion/Conclusion.– Our results are consistent with those in the literature showing a neuro-protective effect of bilingualism. They will be discussed in relation to those obtained earlier (adolescents/adults) showing that those executive skill profiles evolve with age.

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Posters

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Effectiveness of exercise to reduce falls and injuries in elderly people

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Introduction.– Falls are a major source of death and injury in elderly people, and are one of the leading causes of disability in that population. About 30% of persons over the age of 65 who live in the community fall each year. Strategies for reducing the frequency of this common cause of mobility and mortality are needed. Physical exercise acts over muscle-skeletal function, cardio-circulatory, respiratory, metabolic, immunological and psycho-neurological. Regular exercise may prevent falls and fall-related fractures. Nevertheless it is a great controversy around exercise prescription regarding kind, frequency, intensity and duration of the exercise necessary to prevent falls.

Objective.– To assess the effectiveness of programmed exercise to reduce falls and injuries in elderly people.

Methods.– Different sources of search have been used: Scientific Pub Med-Medline, Pedro, Cochrane Library and magazines.

Results.– There is strong evidence that exercises programs can reduce fall rates in older people. Balance training, strengthening exercises, muscle endurance and walking programs must be included. Combined frequency of exercise on a weekly basis with program length is superior discriminating between less-length when analyzed separately.

Conclusion.– Evidence with Tai-Chi exercises has been found.

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Interest of assessment and rehabilitation by visual biofeedback in treatment of postural trouble of fallers' elderly subjects

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Keywords: Elderly subjects; Falls; Posturography; Rehabilitation

Objective.– To determine the postural pattern connected with fall in elderly subjects and to evaluate the effects of biofeedback training in rehabilitation of balance.

Material and methods.– Thirty-four elderly subjects took part in this study: 14 in the first group of fallers, 20 in the second group of non-fallers.

A comparative study between the two groups was effected; assessment consisted of a clinical appraisal and posturographic analysis with forceplate.

The second time is a prospective trial with the elderly subject fallers who benefit from rehabilitation program with visual biofeedback. Clinical and forceplate assessments were performed before and after the program of rehabilitation. Also, the patients ware asked if a fall has been happened on a decline of 12 months.

Results.– Significant differences were observed in specific tests of fall and in posturographic analysis between the two groups. We observed an improvement in clinical tests and posturographic analysis in elderly subjects fallers after a program of rehabilitation with visual biofeedback. Ten patients did not fall during the 12 months back.

Conclusion.– The use of visual biofeedback training looks as interesting in rehabilitation of balance in elderly subjects who have had fall.

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Functional valoration of physical activity program in older adults with musculoskeletal disorders

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Keywords: Exercise program; Pain; Disability; Older people

Introduction.– Musculoskeletal disorders are a cause of disability in older adults. The aim of this study was to evaluate the effectiveness of a physical activity program.

Methods.– Prospective observational study involving 160 outpatients after exercise program during 10 months. Variables: age, hours of sport at week, previous analgesia. The evolution of pain, functional status and physical condition were measured with Visual Analogic Scale(VAS), SF-12 questionnaire(SF-12) and Senior Fullerton Fitness Test(SFFT), respectively.

Results.– Median age: 66.03 years (55.3; 69.7). Exercise: 6.75 (3.43; 10.07) hours per week. Age of onset in the sport: 56.6 (43.4; 69.8) years. Sixty-five percent decreased analgesic consumption. Musculoskeletal pathology: 25% back, 24.37% neck and knee pain. After physical activity program, statistically significant results ($P < 0.0.1$) were found in reducing pain relief (initial VAS = 5.82; final = 2.83); greater values were obtained in the general health