

Typing performance among older generations

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Introduction

Writing is a complex task requiring cognitive and motoric functions [1]. As a result of the technological rise, typing on a keyboard is continuously becoming the most prominent form of writing. Not solely young people but also older generations are confronted with keyboard-based writing due to the increased communication by means of social media platforms [2]. Despite growing numbers of older generations using keyboarding, previous research has been neglected that age group.

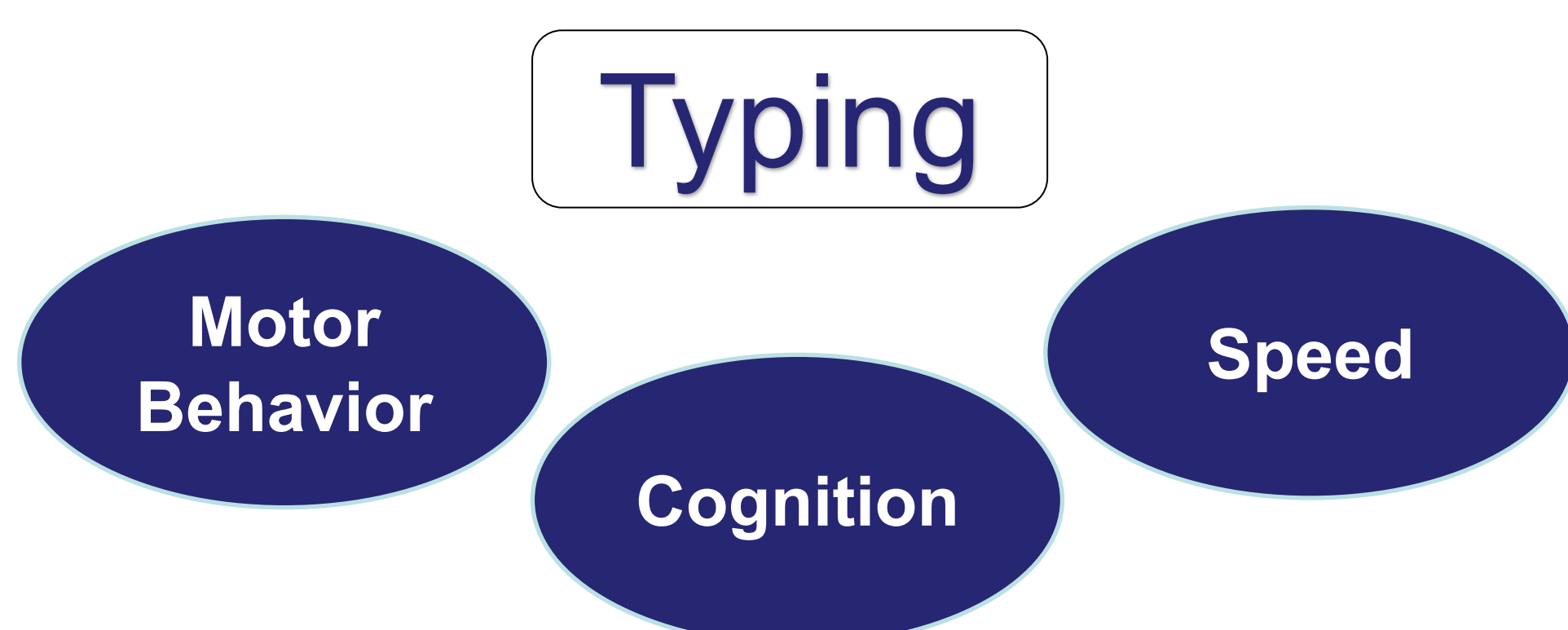


Figure 1. Components of typing

Methods

The input log test

The input log test [3], a version of the Copytask test, was developed to measure typing performance. The test takes 15 to 20 minutes to complete. It consists of 6 domains: speed test, typing a sentence, common word combinations, seldom word combinations, a meaningless sequence of consonants and 'Semi-Nonwords'. An exemplary task is displayed in Figure 2. Further, a neuropsychological test battery was administered.

inputlog

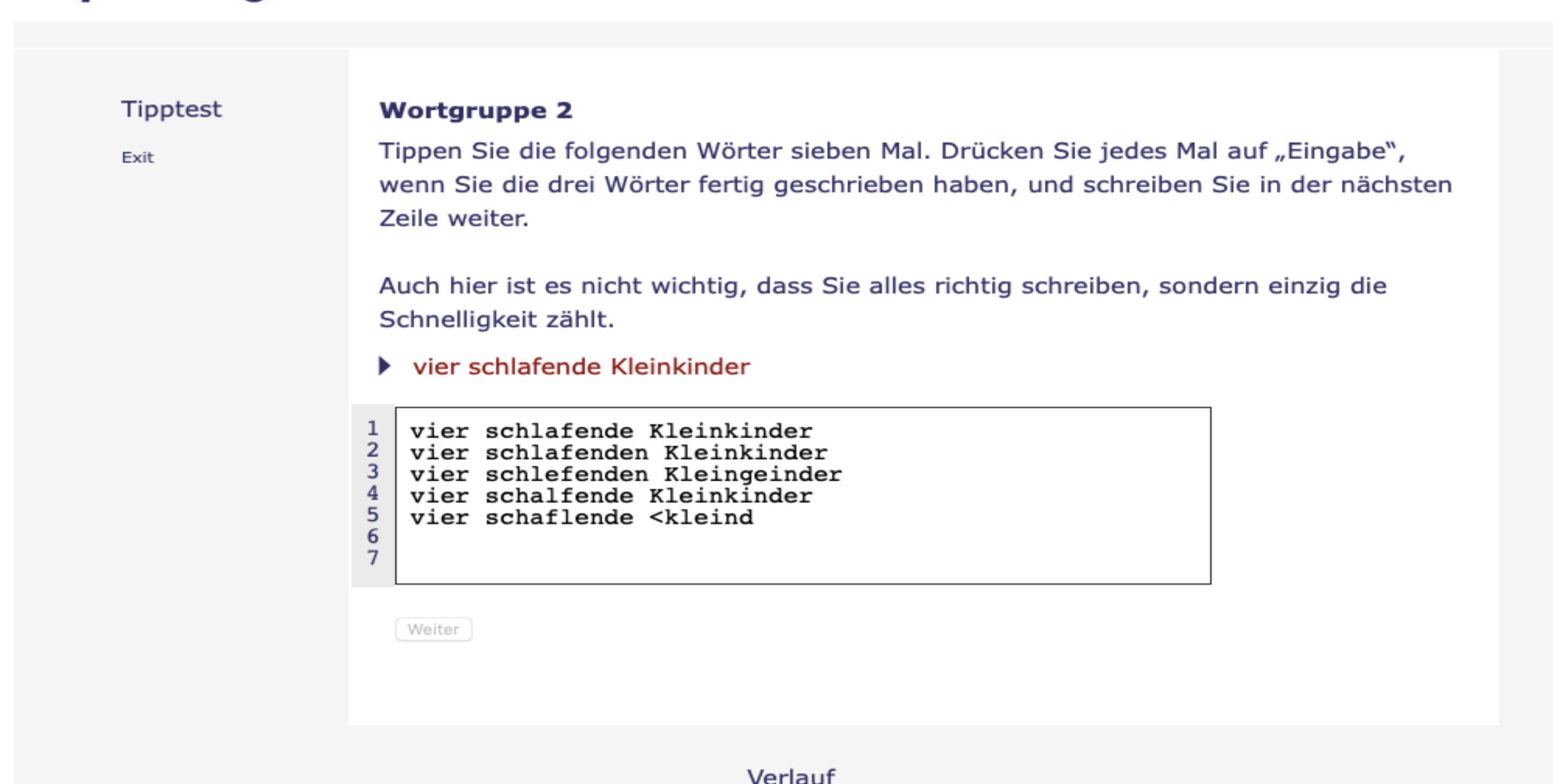


Figure 2. Exemplary task of the input log test

Sample

A cognitive unimpaired sample (N = 159) completed a neuropsychological test battery a keylogging typing test (using the InputLog program). Participants were divided into four age groups, respectively: 50 to 59 years (N = 93), 60 to 69 years (N = 34), 70 to 79 years (N = 22) and 80 years and older (N = 10).

Results

The results of the ANOVA revealed significant differences on the CODE-sumscore between the age groups in which typing performance decreased with older age ($F(3,155) = 19.086, p < .001$, partial $\eta^2 = .270$). The results are displayed in figure 3.

Multiple linear regression analysis was performed to investigate the effect of age on typing performance. The analysis was controlled for gender, education, job training, cognitive and affective status, handedness and mastering the ten finger system. The overall model was significant, $F(5,153) = 22.47, p < .001$. The results indicate age ($\beta = -.431, p < .001$) as a significant predictor for typing performance as well as left-handedness ($\beta = .168, p = .008$) and mastering the ten finger system ($\beta = .352, p < .001$).

Additionally, associations were neither found between the CODE-sumscore and cognitive functioning nor between the CODE-sumscore and depression.

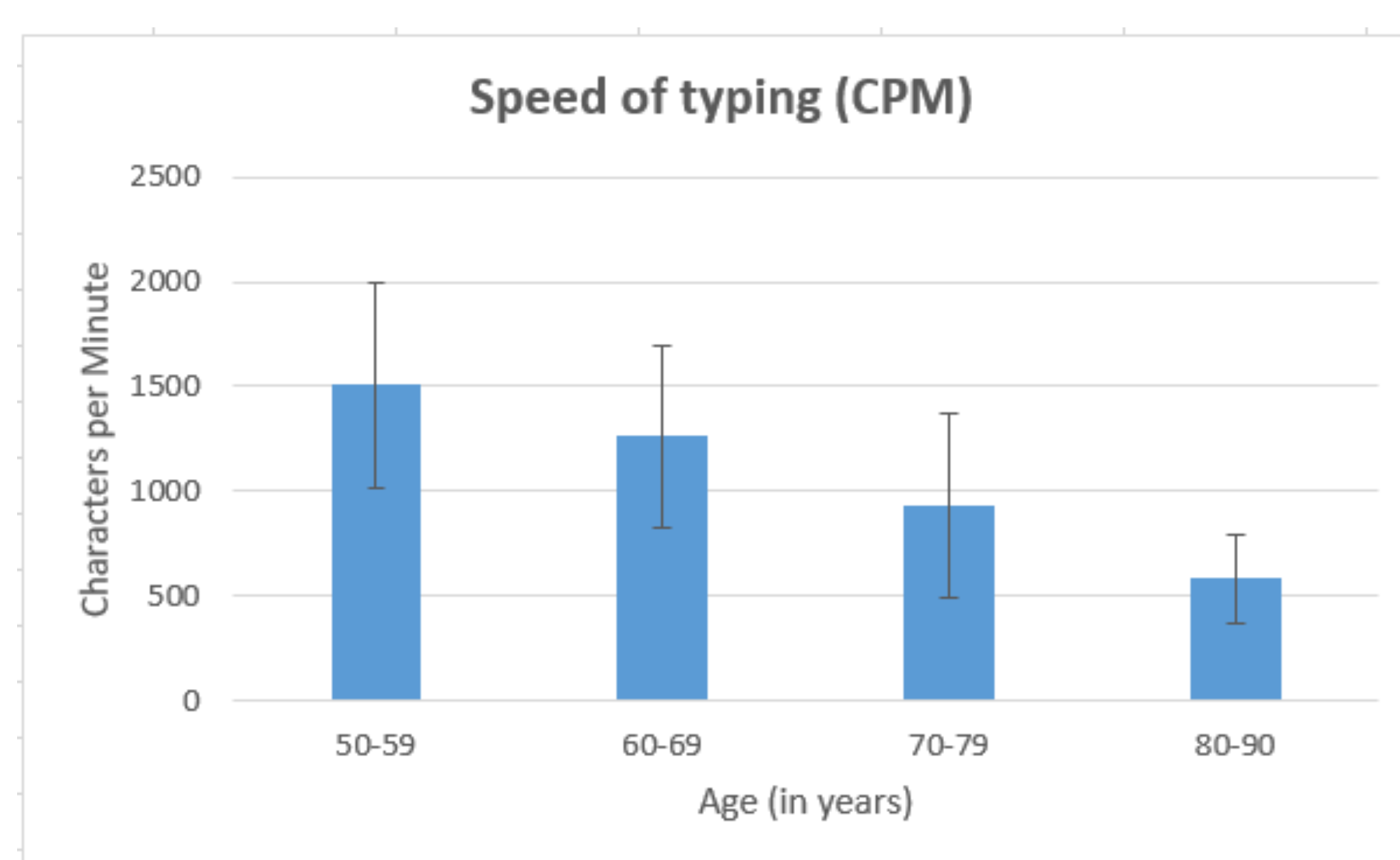


Figure 3. Means and standard deviations of the different age groups

Conclusion

Conclusively, age is an important predictor of typing performance. The ability to type encompasses the aspects speed, cognition and motor behavior which constitute factors found to be restricted by dementia. Based on this data, a cognitive screening tool focusing on typing performance to screen for dementia should be developed. Further, the test should be shortened to a smaller number of items and sensitivity of the test items should be established.

Literature

- [1] Kellogg, Levy, & Ransdell (1996). The science of writing: 57
- [2] Greenwood, Perrin, Duggan. (2015). Social media update 2016: Facebook usage and engagement is on the rise, while adoption of other platforms holds steady
- [3] Van Waes, Leitjen, Pauwaert, & Van Horenbeeck. The input log test