Walking sticks as an Assistive Technology Resource for Mobility in Older Adults: Effects on Locomotor Performance and Perceived Effort G.C. Agostinho, G.M.P. Thomazelli, K B. Agostinho, E.O.R.C. Goulart, R.T. Monteiro, M.S. Julio, R.C.S. Kuroishi, F.O. Medola, C.S.S.Castro. *Gerontechnology* 25(s)

Purpose Mobility is a key determinant of quality of life in older adults, as it enables the performance of daily activities, social participation, and the preservation of functional independence. Previous studies have reported an increased use of walking poles by older adults during outdoor activities, aiming to reduce lower-limb joint pain and to enhance balance and gait stability [1]. Accordingly, the present study aimed to evaluate the performance of older adults during locomotor tasks with and without the use of walking poles, analyzing execution time, physiological responses, perceived effort, and perceived safety. **Method** An exploratory study was conducted with 30 community-dwelling older adults (mean age 73.4 years; range 60–88), predominantly female (n=28). Most participants were retired and independent in basic activities of daily living, and the majority were also independent in instrumental activities. Data collection included a sociodemographic and health questionnaire, the Lawton and Brody Index, the Timed Up and Go test (TUG) [2] and the Borg Rating of Perceived Exertion scale [3]. Two identical pairs of adjustable aluminum walking sticks were used, preceded by a 10-minute familiarization period. Participants performed the TUG and a 3-minute walk on a level 15-meter walkway, with (bilaterally) and without walking poles, in randomized order. Perceived exertion was assessed after the 3-minute walk. **Results and Discussion** A statistically significant difference (W=92; Z=-3.05; p=0.002)) was observed in TUG performance, with a shorter mean execution time without walking poles (11.17±2.73 s) compared to the condition using the device (13.25±4.18 s). Regarding perceived exertion during the 3-minute walking at comfortable speed, participants reported low effort in both conditions, with slightly higher median values when using walking sticks (mdn=2.00, min=0, max=8.00, IQR=2.00) than when not using the devices (Mdn=1.00; min=0, max=8.00, IQR=2.00), but with no statistically significant difference (p=0.35). The current findings suggest that, among active and functionally independent older adults with no experience with the use of walking sticks, the use of such devices may negatively affect mobility performance, suggesting no immediate functional benefit. However, it is possible that a longer period of experience may lead to different results, considering the learning and adaptation to the use of the device. Therefore, future studies should explore long-term effect of the use of walking poles on the mobility performance. From a gerontechnology perspective, these findings highlight the importance of evaluating the performance and the suitability of assistive mobility devices according to individual functional characteristics, reinforcing the need for personalized prescription and the development of technological solutions aimed at promoting safe mobility in older adults.

References

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