

Trekking Poles to Aid Multiple Sclerosis (TRAMS): A Comparison of Psychosocial Impact and Function with Walking Assistive Devices in Persons with Multiple Sclerosis

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- Walking difficulty is the most common physical functional complaint reported by persons with Multiple Sclerosis (MS) (e.g. Minden et al, 2006)
- Initial discussion about the use of assistive devices (AD) to mitigate this difficulty is often met with resistance and denial of the need due to perceived psychosocial impact of their use

Minden, S. L., Frankel, D., Hadden, L., Perloff, J., Srinath, K. P., & Hoaglin, D. C. (2006). The Sonya Slifka longitudinal multiple sclerosis study: methods and sample characteristics. *Multiple Sclerosis*, 12(1), 24-38.

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Objective: To compare the psychosocial impact of, and walking function with, 3 AD in persons with MS:

- o Single point cane (SPC)
- o Narrow-based four point cane (FPC)
- o Trekking pole (TP)



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- Initial subject recruitment targeted patients from our MS clinic with confirmed MS diagnosis by McDonald criteria (2010) and perceived walking difficulty not requiring more than unilateral support

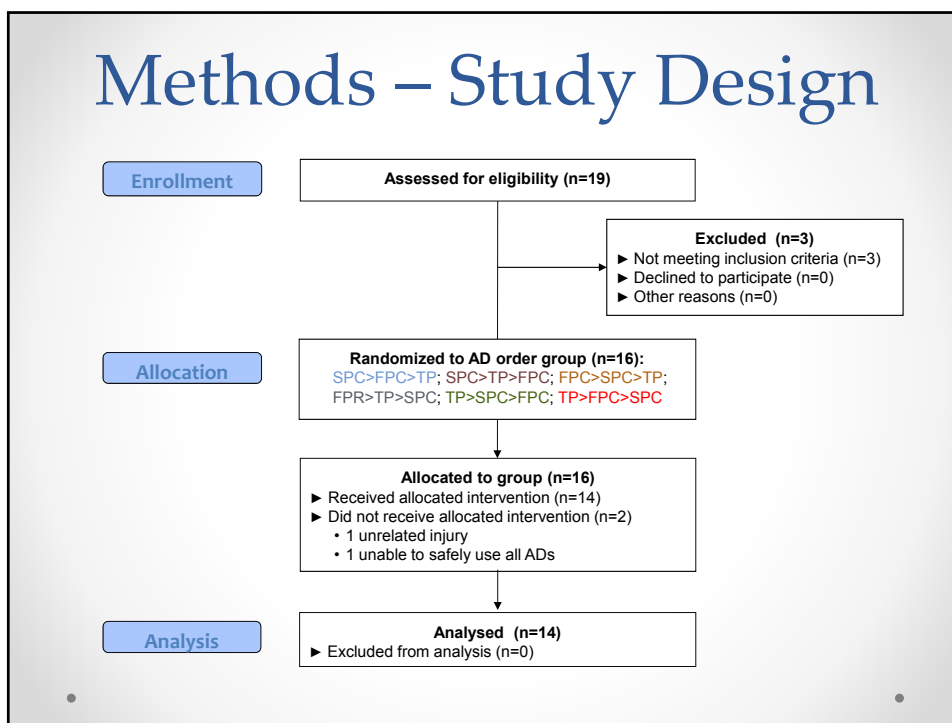
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- At the study screening visit, EDSS evaluation was performed and patients with EDSS scores up to and including 6.0 were eligible for inclusion

Study Variables

- Six-Minute Walk Test (6WMT) distance
- Psychosocial Impact of Assistive Devices Scale (PIADS)
 - 26-item questionnaire
 - “How is your _____ affected by using the _____”
- 12-item Multiple Sclerosis Walking Scale (MSWS-12)
- Activity-Specific Balance Confidence Scale (ABC)
- 5-Item Modified Fatigue Impact Scale (MFIS-5)
- Visual Analog Scale of Fatigue (VASF)

Methods – Study Design



Method: Analyses

- Within-subject differences between AD conditions were analyzed for each study variable
 - Data was analyzed with repeated-measures ANOVAs or Friedman's tests (as appropriate) with planned pairwise comparisons

Results: Participant Characteristics

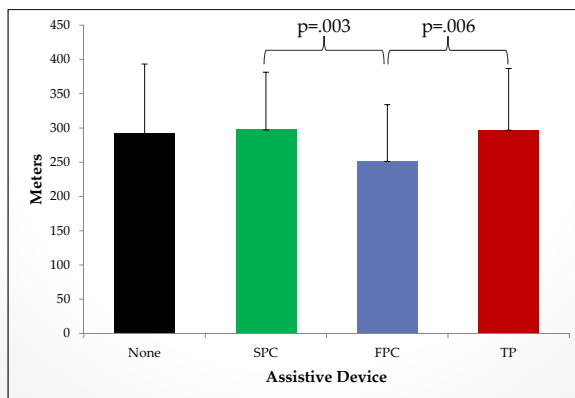
Fourteen persons with MS

- 12 women and 2 men
- Age range 33-64 years (mean 52.3)
- EDSS range 2.5-6 (median 4.25, IQR 2)

Results: Walking Performance

6-Minute Walk Test

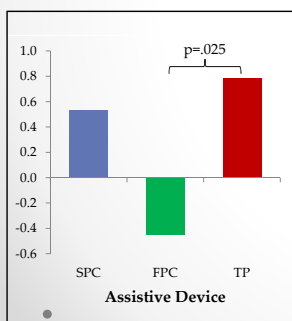
- Participants walked farther during a 6MWT with the SPC and the TP compared to the FPC



Results: Psychosocial Impact

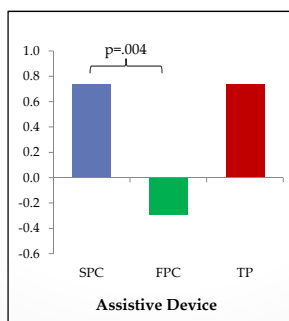
PIADS-Adaptability

- Better with the TP, but not the SPC, compared to the FPC.



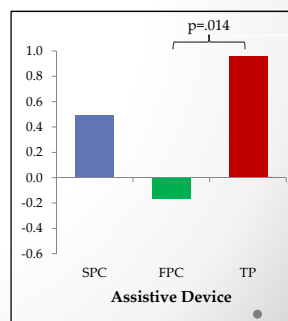
PIADS-Competence

- Better with the SPC, but not the TP, compared to the FPC.



PIADS-Self-Esteem

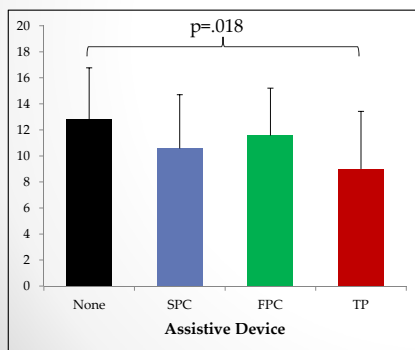
- Better with the TP, but not the SPC, compared to the FPC.



Results: Fatigue

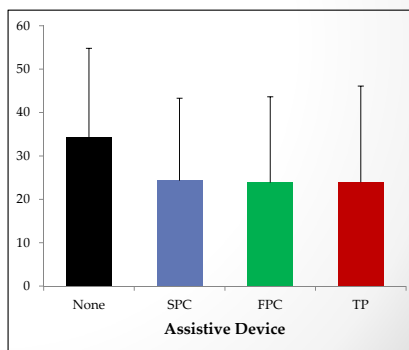
5-Item Modified Fatigue Impact Scale

- Better (i.e. lower) with TP compared to the baseline



Change in Visual Analog Fatigue Scale

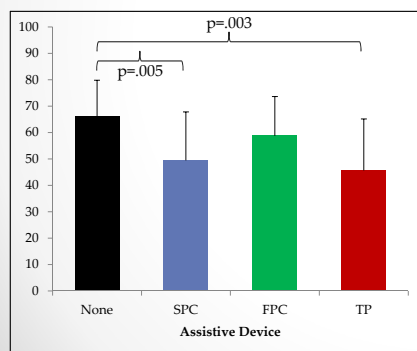
- No difference induced by the 6MWT between AD conditions



Results: Self-Report of Walking and Balance

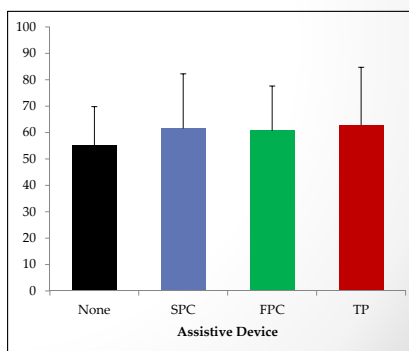
12-Item MS Walking Scale

- Better (i.e. lower) with TP and SPC compared to the baseline



Activities-Specific Balance Confidence Scale

- No difference induced by the 6MWT between AD conditions



Conclusions and Recommendations

- The SPC and TP generally resulted in the best walking function and lowest fatigue.
- Participants reported higher competence with the SPC, and better self-esteem and adaptability with the TP.
- Both the SPC and TP may be viable options for persons with MS that need an AD.
- The TP should be considered for persons for whom self-esteem and adaptability are important considerations.

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