

EDSS: To walk or not to walk? Assessing the reliability of patients to self-report their ambulation distance prior to measuring actual distance walked.

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Introduction

The most commonly used disability scale in patients with Multiple Sclerosis is EDSS (Extended Disability Scale Score), which was developed by J.F.Kurtzke in 1983. EDSS scores 5.0 to 8.0 are predominately defined by impairment in ambulation. It is common in clinical practice to substitute the walking test with self-reported patient information on ability to walk, especially for patients who are able to walk greater than 100 m. There is little information published about the reliability of using such an approach and factors affecting it.

Objectives

(1) To establish correlation between subjective walk (SW, self-reported patient ability to walk) and objectively walked distance under supervision of trained provider (OW). (2) To analyze impact of different cognitive factors on this correlation in patients from a community based MS Clinic.

Methods

We randomly selected 30 MS patients (20 females, 10 males) with varying degrees of disability. Per clinical practice, each patient was assessed for: depression, anxiety, fatigue, cognition, and administered the timed 25 foot walk test as well as reported SW and Patient Determined Disease Steps (PDDS) prior to walking up to 500 m under supervision of trained provider (OW).

Figure 1: Age Distribution

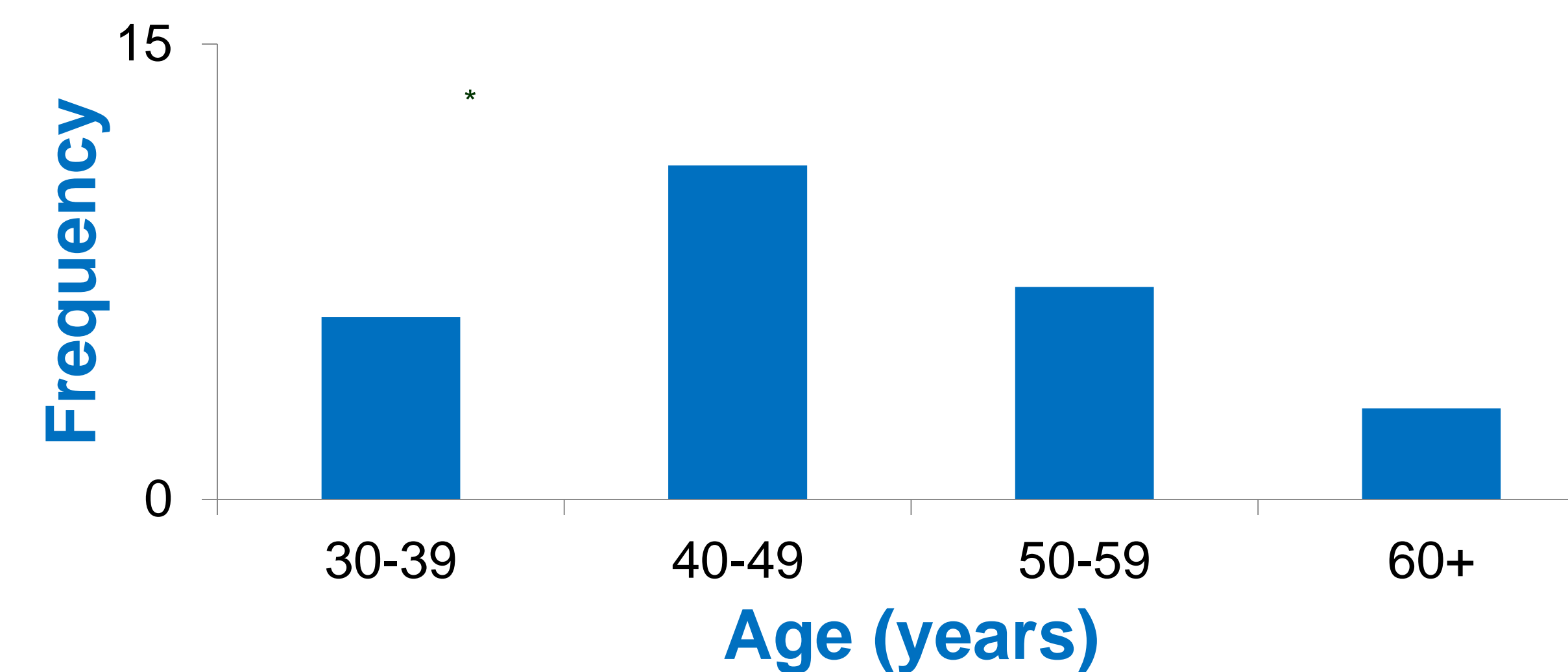


Figure 2: Subjective Walking vs Objective Walking Distance

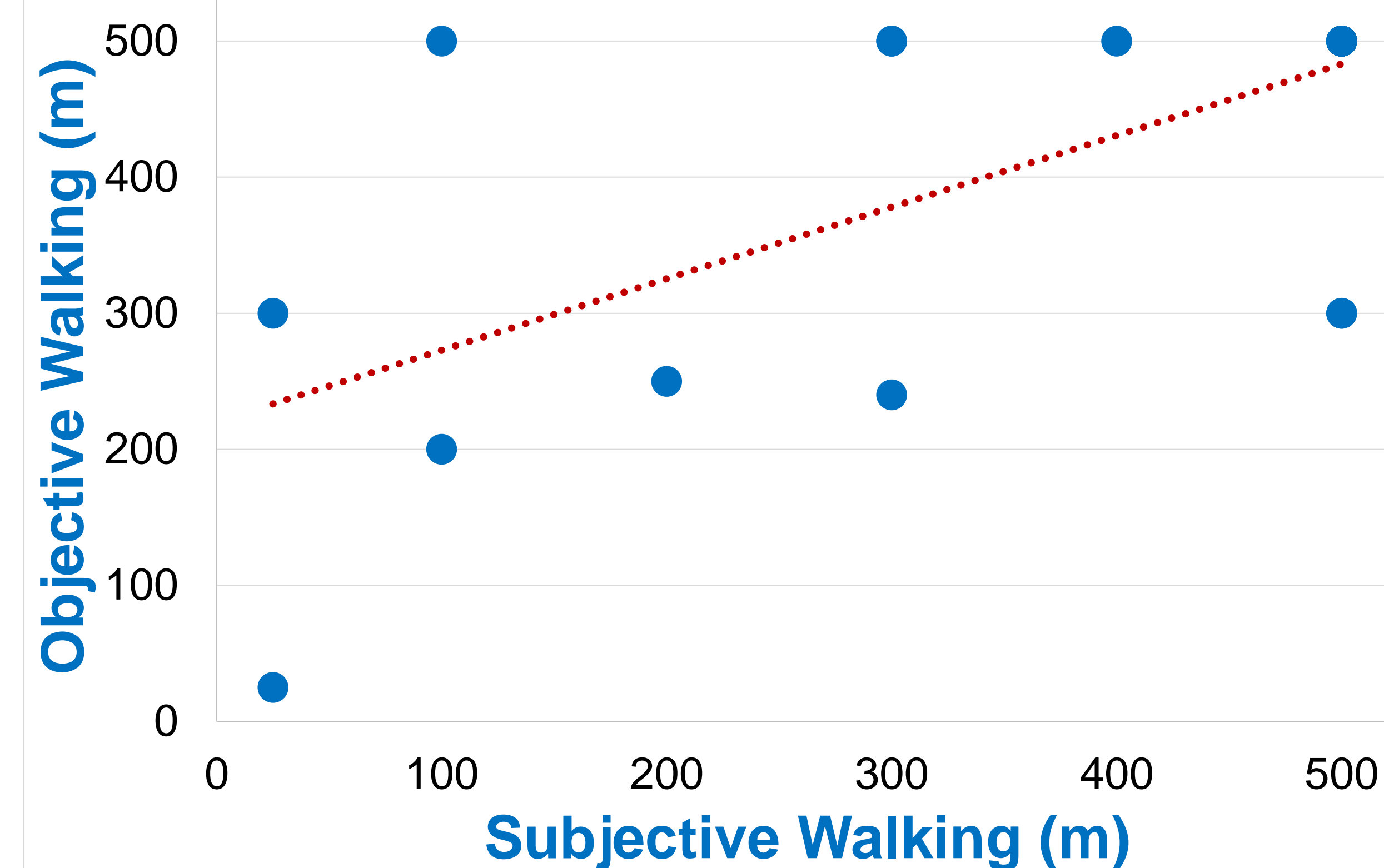
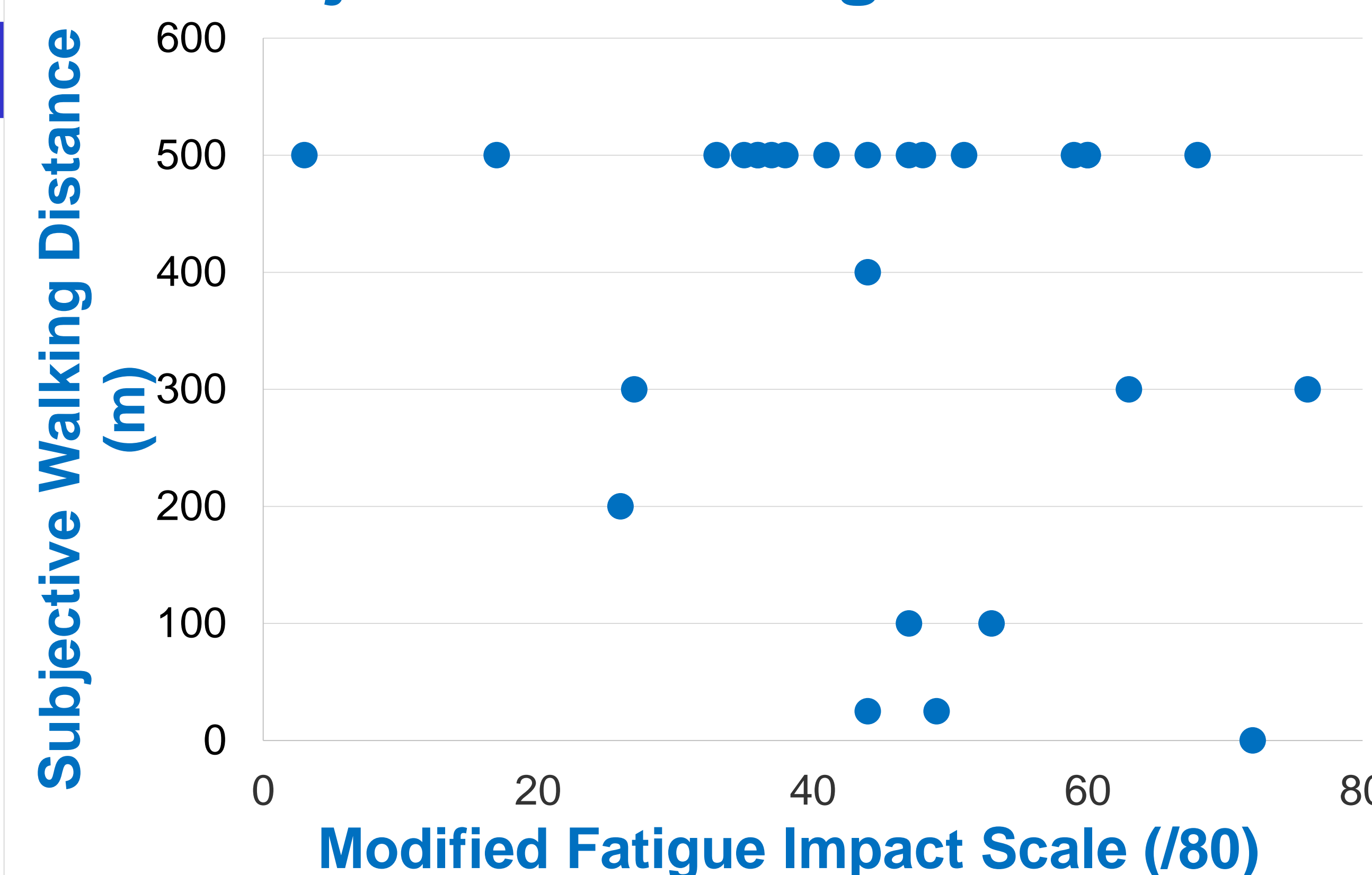


Figure 3: Fatigue vs Subjective Walking Distance



Results

We excluded three patients from 30, who were unable to estimate SW but able to walk 100 m - 400 m. The mean age was 46 ± 8 years (Figure 1). Among 18 patients with SW of 500 m or more, 3 (17%) were not able to walk further than 300 m. The PDDS was between 2 and 3 for these patients. Among 9 patients with SW less than 500 m, 7 patients (78%) were able to walk 100 m greater than they reported, which affects EDSS. The correlation between subjective and objective walking distance was 0.6 ($p < 0.001$) (Figure 2). Of these 7 patients, PDDS was between 3 and 5 and none had severe cognitive impairment, depression, anxiety or fatigue. There was no correlation between fatigue and subjective walking distance (Figure 3).

Conclusion

Patient self-reported ability to walk differs from actually measured in some patients (17%) who have reasonably preserved ambulation, and in majority of the patients (78%) with limited ambulation.

This data reinforces proper technique of measuring ambulation with trained supervised provider to obtain accurate EDSS scores. We were unable to determine impact of depression, anxiety, fatigue, cognition, 25 ft. walk and reported SW and PDDS on self-reported bias.

Additional studies with larger numbers of patients will be needed to confirm our results and to analyze the impact of above mentioned factors.

References

- Kurtzke JF (1983). "Rating neurologic impairment in multiple sclerosis: an expanded disability status scale (EDSS)". *Neurology* 33 (11): 1444-52.
- Hohol MJ, Orav EJ, Weiner HL. Disease Steps in multiple sclerosis: A simple approach to evaluate disease progression. *Neurology* 1995; 45: 251-55.