

Monitoring Fatigue with a Mobile Phone and Internet Application: A Feasibility Study

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Introduction

- Fatigue is one of the most common and disabling symptoms in adults with multiple sclerosis (MS).
- Fatigue is subjective and occurs at different times of day in and across patient groups.
- Real-time reporting can better inform patients and clinicians, and facilitate better monitoring and management of MS related fatigue.
- The objective of this study was to investigate the feasibility of a smart phone- and web-based data collection application for fatigue monitoring, medication adherence, and site injection pain in persons with MS who are prescribed glatiramer acetate (GA)



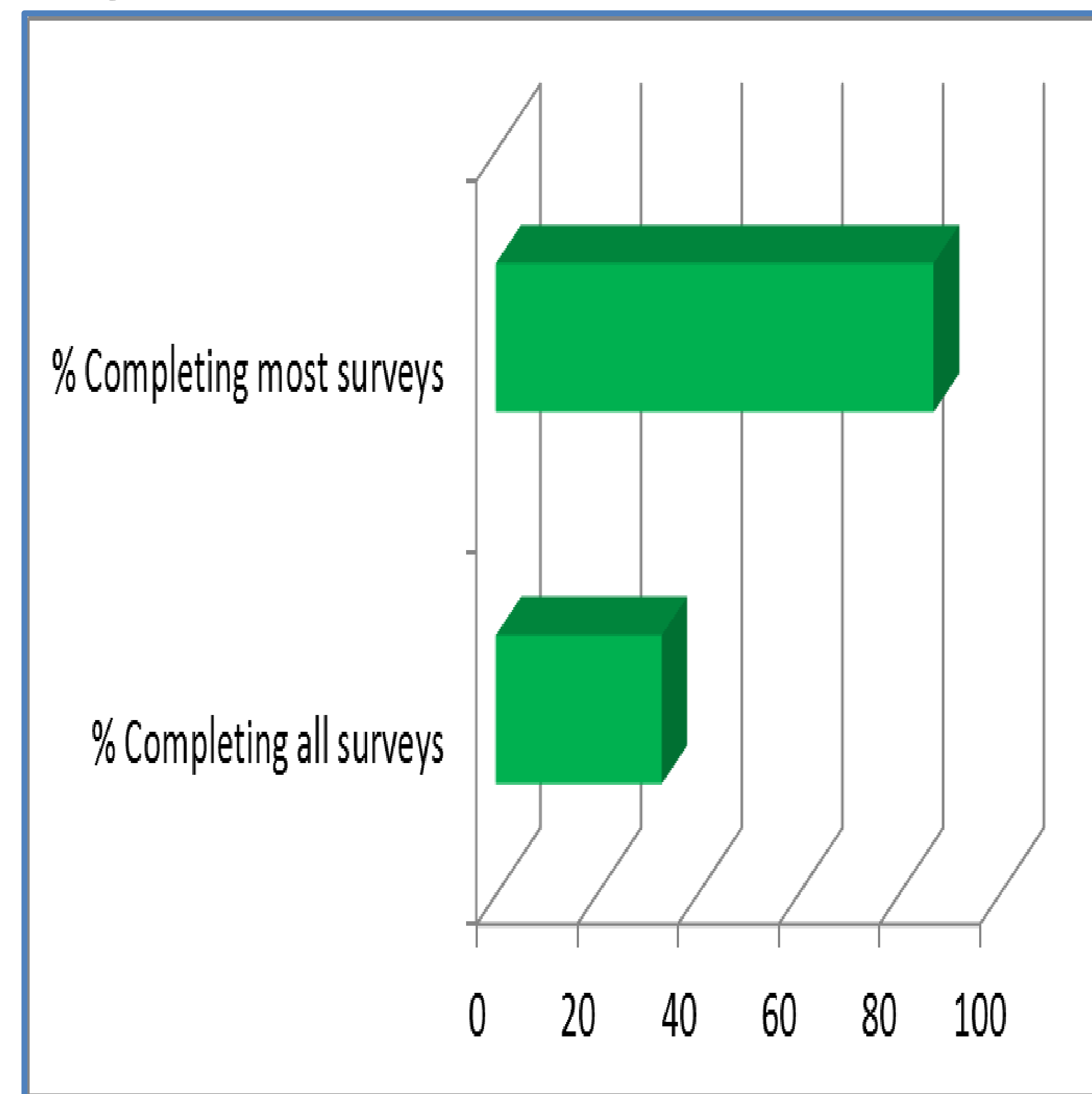
Methods

- A convenience sample of adults with MS used web-based surveys to report:
 - Fatigue timing and severity
 - Medication adherence
 - Site injection pain
- Participants reported daily for 7 consecutive days for one week and again for 7 days one month later.
- At baseline PRO measures were collected:
 - CES-D Short Form
 - SR-EDSS
 - PROMIS Fatigue Scale Short Form
 - Visual Analog Scale (VAS)
 - WHO-DAS Quality of Life

Results

- To date, 16 participants taking GA three times per week have completed the study.
- Feasibility of use was good and was highest in the first few days of use.
- Barriers included: email reminders broken or going to spam, different browsers, problems loading and saving the survey. Some participants were not technology savvy.

Figure 1. Feasibility



Log In

Username:
c1est

Password:

Fatigue Scale Survey

During the past 7 days...

I feel fatigued

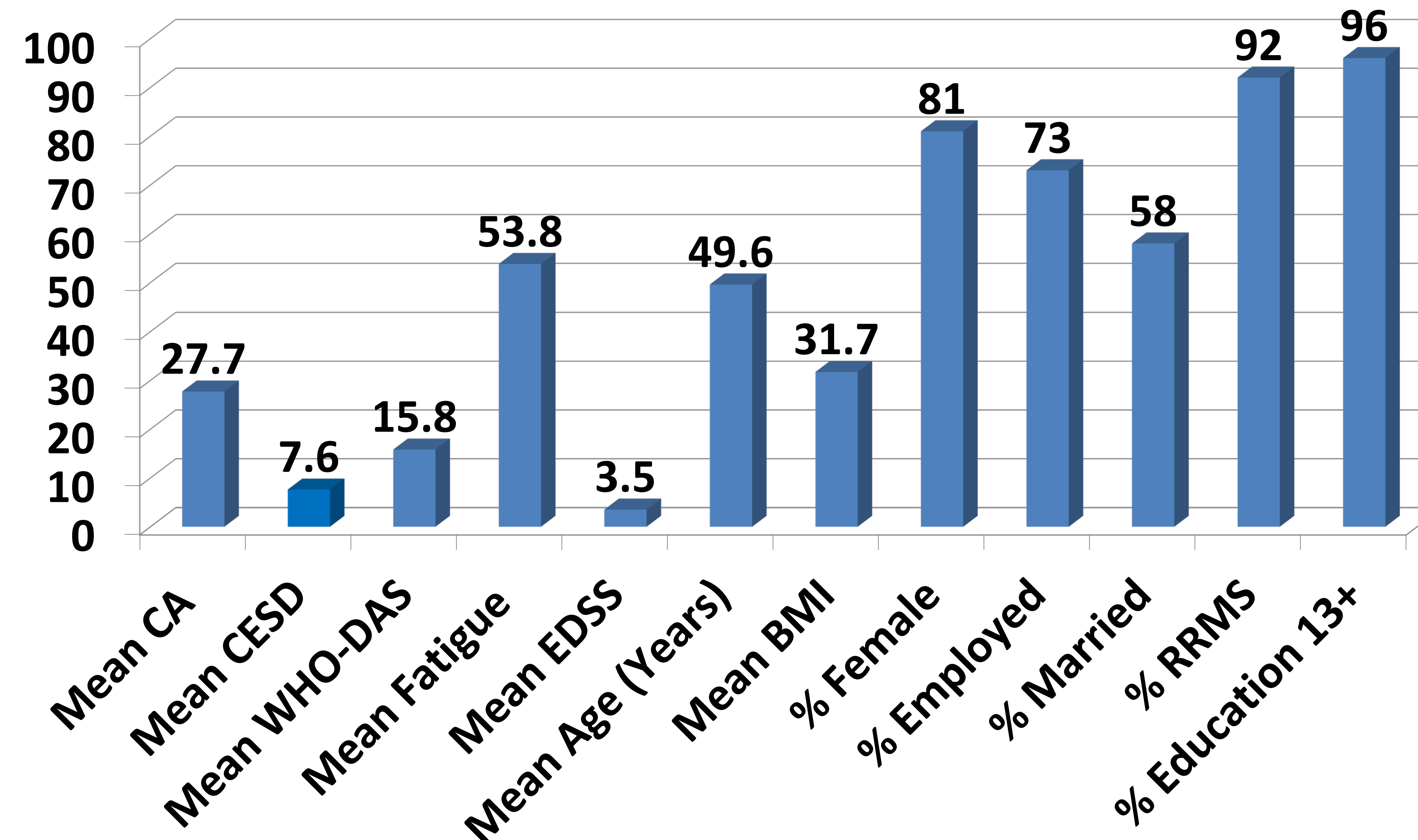
I have trouble starting things because I am tired

In the past 7 days...

How run-down did you feel on average?

How fatigued were you on average?

Figure 2. Characteristics of Study Participants (n=16)



Discussion

- This smartphone application appears feasible in gathering fatigue, medication adherence, and PRO QOL data in this small pilot study.
- A version of these applications may be useful in the future to provide individual estimates of fatigue and other variables to facilitate larger scale MS studies.
- This application could be utilized to improve clinical monitoring and treatment of fatigue.
- Further improvement of the application is needed to optimize accessibility of use.

Conclusions

- The use of the mobile application may be an easy and inexpensive way to monitor and identify early signs of onset fatigue, and could be used to improve patient-centered care for adults with MS.
- Our initial pilot testing supports the feasibility of the fatigue application.
- The application may have clinical as well as research implications.

References

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