Managing Fatigue with Technology for Individuals with MS
May Anne Gamueda, OTS; Janie Grant, OTS; America Ortega, OTS; Jordan Song, OTS
Capstone Advisor: Susan Morris, PhD, OTR/L
Dominican University of California Department of Occupational Therapy
Special thanks to the creator of Pace My Day app Michelle Ranae Wild, M.A.

INTRODUCTION

- Every year, over 2.5 million people are diagnosed with multiple sclerosis (MS) worldwide (Faguy, 2016).
- Fatigue is one of the most common and debilitating symptoms among individuals with MS by restricting individuals from participating in their daily occupations.
- Research has shown that energy conservation techniques can result in lower levels of fatigue in individuals with MS (Tur, 2016).
- The purpose of this study is to investigate whether a mHealth app will result in a decrease in fatigue and an increase in adherence of energy conservation techniques for adults with MS.

STATEMENT OF PURPOSE

The purpose of this study is to investigate whether a mHealth app will result in a decrease in fatigue and an increase in adherence of energy conservation techniques for adults with MS.

DESIGN AND METHODOLOGY

Design
Quantitative, Exploratory, pre-test-post-test design
Participants
Individuals with multiple sclerosis, ages 36-72

Recruitment and Data Collection:
- MS society of Northern California
- Email and flyers
- PMD data, Modified Fatigue Impact Scale (MFIS), Canadian Occupational Performance Measure (COPM), post-study questionnaires

Data Analysis:
- Quantitative Data: Statistical Package Social Sciences Version 22.0
- Qualitative Data: Questionnaire regarding use of app and energy conservation management techniques

RESULTS

A paired sample T test to show comparison of the average differences in fatigue levels and performance and satisfaction before the PMD intervention and after. A two-tailed T-test was used to determine if there was a difference in the average between the pretest and posttest.

A paired sample T test to show comparison of the average differences in fatigue levels and performance and satisfaction before the PMD intervention and after. A two-tailed T-test was used to determine if there was a difference in the average between the pretest and posttest.

- During the post-test interview, users were asked to rate the helpfulness and satisfaction of the PMD and ECM on a 10 point Likert scale. 10 being most beneficial

- 6.14: average rating for helpfulness for using the PMD.
- 7.24: average rating for recommending PMD to others.

DISCUSSION AND IMPLICATIONS

Discussion
- Two weeks pre-post results revealed a significant reduction in overall fatigue for all 7 participants that utilized energy conservation and PMD app.
- Significant reduction in the average level of fatigue was indicated among two of the three categories of the MFIS (physical at .02, cognitive at .001) but not so much psychosocial.
- PMD app was more successful in increasing satisfaction in the task than performance based off the COPM. This indicates an increase in participant’s self-rated ability to complete their chosen task with more satisfaction.

Suggestions for Future Research
- Conduct longitudinal studies with other populations with different fatigue-related diagnoses to evaluate adherence and use of mHealth apps over a greater time period.
- Create a randomized control trial to compare the effectiveness of PMD app compared to traditional ECM education.

Suggestions for Occupational Therapy
- Use assistive technology such as mHealth app as part of interventions to improve occupational performance.
- Occupational therapists can collaborate with app developers to implement energy conservation techniques into self-management/time management applications.
- Promotes adherence to self-management and energy conservation strategies and motivation to track the progression and completion of short and long term goals.

LIMITATIONS

- Small data sample size (n=7)
- Length of study being only 2 weeks.
- Low external validity factors: one geographic location (Marin County) and Caucasian female.
- Self-reported measures subject to biases.
- Attrition and completion of goals and objectives due to extraneous variables (medication, work, diet).
- Client’s difficulty using app and technical complications.

REFERENCES