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School of Health Related Professions

A Pilot Study of the Effects of an 8-Week Integrative Yoga Program on Function and Quality of Life in Persons with Moderate Disability Related to Multiple Sclerosis


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Background

- Many persons with MS seek out and utilize **Complementary and Alternative Medicine** therapies. (Stoll, Nieves, Tabby & Schwartzman, 2012)
- **12-31%** of persons with MS surveyed have participated in **yoga**. (Berkman, Pignotti, Cavallo & Holland, 1999; Esmonde & Long, 2008; Nayak, Mathies, Schoenberger & Shiflett, 2003; Schwarz, Knorr, Geiger & Flackenecker, 2008; Stuijbergen & Harrison, 2003)
- **60-80%** reported that yoga was helpful. (Esmonde & Long, 2008; Stuijbergen & Harrison, 2003)
- There is much anecdotal evidence of the benefits of yoga, but little research that substantiates its use.

Background

- Previous studies of yoga for persons with MS found positive effects on
 - Health-related quality of life (Ahmadi, Nikbakh, Arastoo & Habibi, 2010; Garrett et al, 2013; Oken et al, 2004)
 - Fatigue (Ahmadi et al, 2010; Garrett et al, 2013; Oken et al, 2004)
 - Balance (Ahmadi et al, 2010; Salgado et al, 2013)
 - Walking ability (Ahmadi et al 2010)
 - Strength (Salgado et al, 2013)
 - Respiratory function (Salgado et al, 2013)
 - Selective attention (Velikonja, Čurić, Ožura & Jazbec, 2010)
- Interventions varied widely
- Some descriptions of interventions limit reproducibility

Purpose

- Develop a reproducible yoga intervention program, designed specifically for persons with moderate disability related to MS
- Conduct a pilot trial of the intervention to determine:
 - Feasibility
 - Effects on physical performance
 - Effects on quality of life

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Development of the Yoga Intervention Protocol: A Modified Delphi Panel Process

- Panel Recruitment**
 - Health care providers and scientists
 - Yoga researchers, therapists and instructors
 - Persons with MS who teach and/or practice yoga
- Survey Round 1**
 - Panelist demographics
 - Identification and prioritization of components of a relevant program
- Survey Round 2**
 - Timing and order of class components
 - Static vs. progressive program
 - Specific practices and ability-based modification
- Survey Round 3**
 - Feedback and consensus on intervention framework

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The Yoga Intervention Protocol

- Two 90-minute-long classes per week for 8 weeks
- Planned progressions included in the protocol
- Classes were taught by two instructors and one assistant
- Home practice encouraged

Component	Duration
Philosophy	10 minutes
Pranayama/ Breathing	15 minutes
Asanas/ Postures	40 minutes
Relaxation practice	10 minutes
Meditation	10 minutes

Participant Characteristics

- 15 women with confirmed diagnosis of MS

Variable	Mean	Range
Age (years)	53.5	34-64
Years since diagnosis	13.9	2-26
Disease Severity*	4.67	3-6

* Disease severity measured with the self-report of MS disease severity published by Kolbelt and colleagues (Kolbelt G, Berg J, Lindgren P, Jönsson, 2006)

Outcomes: Physical Performance Measures

- **MS Functional Composite components**
 - 25' timed walk test (25TWT)
 - 9-hole peg test dominant (9HPT-dom) and non-dominant (9HPT-non)
 - 3-second paced serial addition test (PASAT-3)
- **6-minute walk test (6MWT)**
- **5-times sit-to-stand test (5STS)**
- **Multidirectional reach test (MDRT)**

Outcomes: Quality of Life/Participation Measures

- **MS Quality of Life Inventory (MSQLI)**
 - Short Form Health Survey (SF-36)
 - Modified Fatigue Impact Scale (MFIS)
 - MOS Pain Effects Scale (PES)
 - Sexual Satisfaction Scale (SSS)
 - Bladder Control Scale (BLCS)
 - Bowel Control Scale (BWCS)
 - Impact of Vision Impairment Scale (IVIS)
 - Perceived Deficits Questionnaire (PDQ)
 - Mental Health Inventory (MHI)
 - Modified Social Support Survey (MSSS)

- **12-item MS Walking Scale (MSWS-12)**

Methods: Study Design

- Single group pilot study with no control group

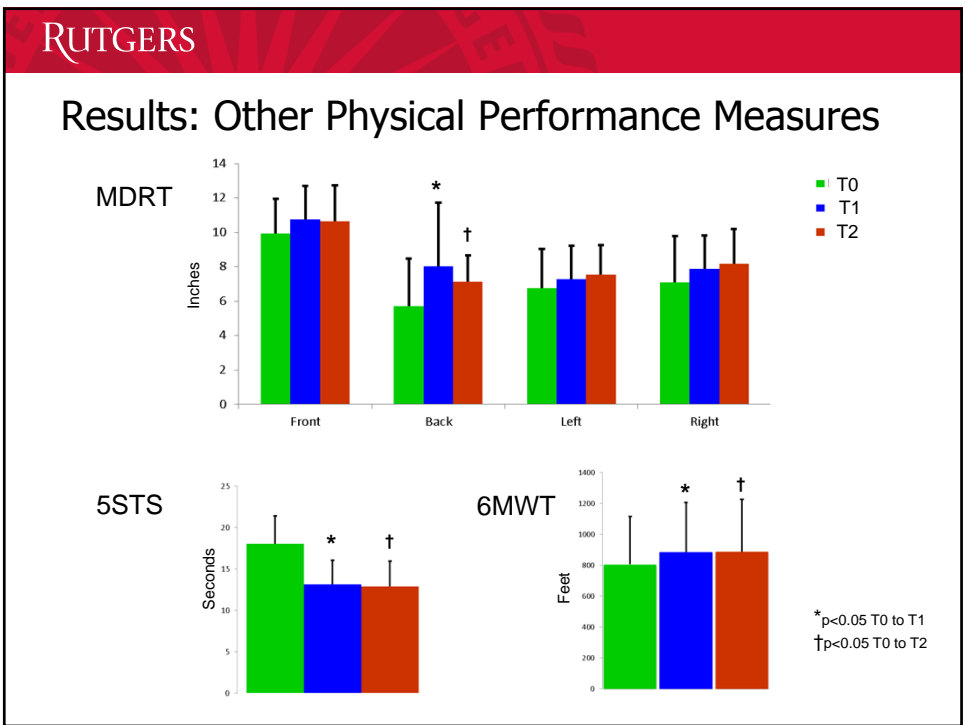
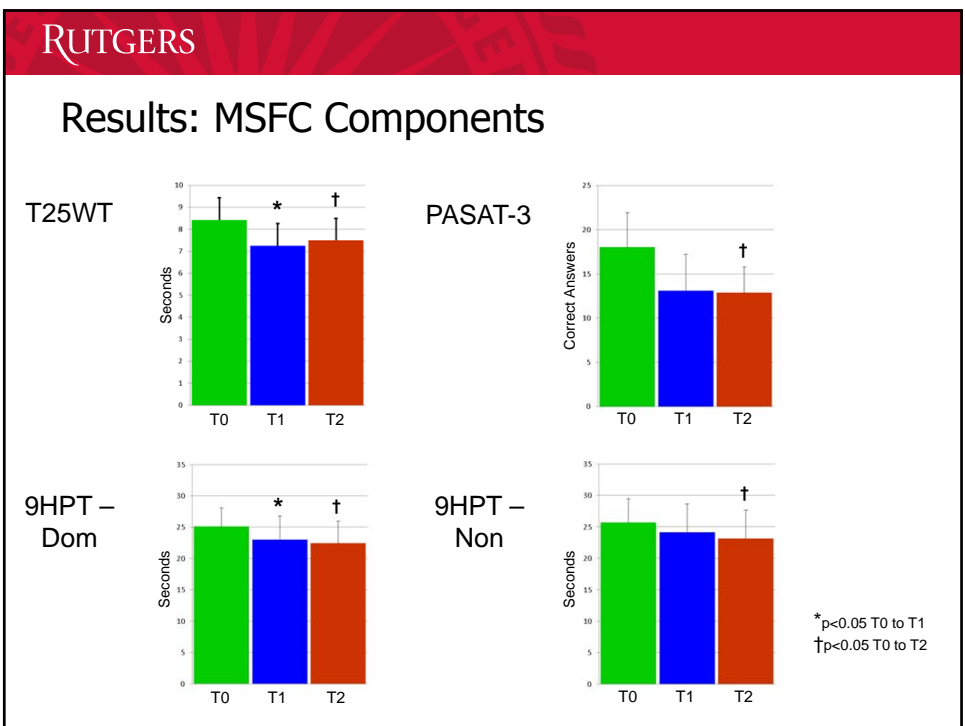
- Three measurement points
 - Before intervention (T0)
 - Immediately after intervention (T1)
 - 8-week follow-up (T2)

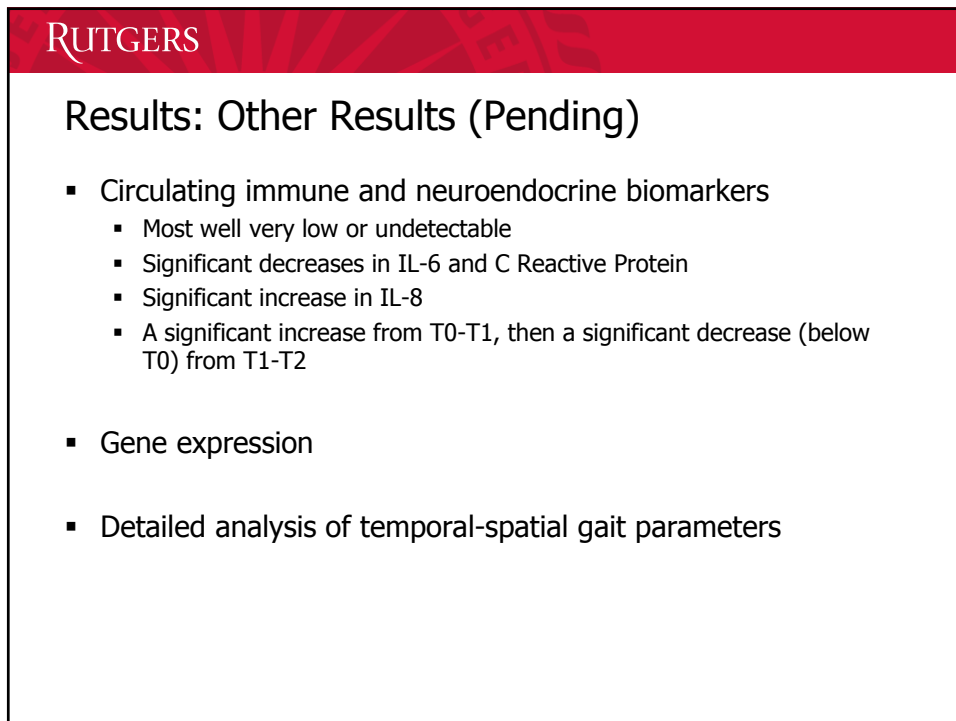
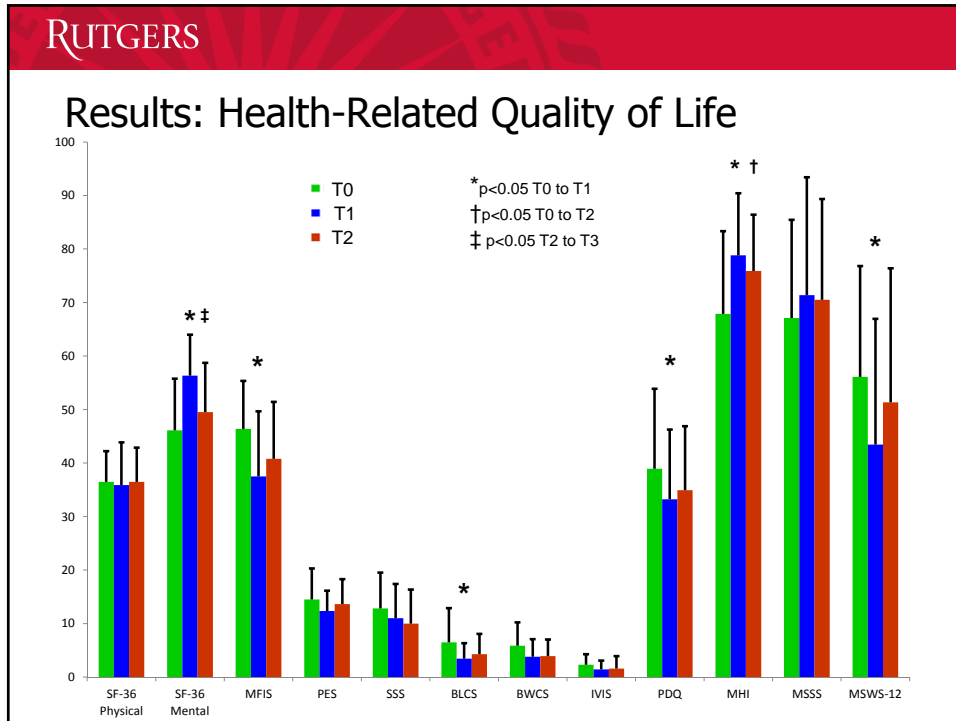
Method: Statistical Analyses

- Statistical analyses
 - Normally distributed data was analyzed with repeated-measures analysis of variance
 - Non-normally distributed data was analyzed with Friedman's test
 - Appropriate post-hoc tests were utilized to determine changes between periods (T0-T1, T0-T2, T1-T2)

Results: Feasibility

- Feasibility and safety of this intervention was demonstrated
 - 14 participants completed the study and data collection at all three time points
 - 1 participant withdrew after participating in a single yoga session (not MS related)
 - Overall class attendance was very high (89%)
 - Adverse events were not MS-related





Discussion and Conclusions

- The intervention is feasible
- Improvements were found in a number of activity- and participation-level outcomes
- In general, improvements were more persistent at follow-up for physical performance than self-reported outcomes

However...

Discussion and Conclusions

- Interpret these results with caution
 - Small sample size
 - No comparison/control group
- A larger randomized controlled trial is needed to determine intervention-specific results
 - Comparing the program to other exercise interventions
 - Examining separate effects of specific facets of the program

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