Effect of an Eight-Week Adaptive Yoga Program on Mobility, Function, and Outlook in Individuals with Parkinson’s Disease

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Introduction & Background

Parkinson’s Disease

- Progressive Neurological Disease
- Second most common neurological disease (after Alzheimer’s)
- Occurs frequently in older persons - 7 million in US
- 1 in every 1000 for > 65 yrs of age
- By 2020, > 40 million worldwide
- Gradually progressive movement disorders
- Can lead to paralysis and death (PNA is #1 cause of death)
Parkinson’s Disease

Signs/Symptoms

- Bradykinesia
- Tremor
- Rigidity
- Shuffling gait
- Impaired balance
- Impaired function
- Vocal, facial and oral impairments
- Decreased activity level due to impairments
Parkinson’s Disease and Exercise

Balance training, resistance training, gait training, and Tai Chi programs caused improvement in:

- Muscle strength
- Balance and coordination
- Quality of Life (QOL)
- Activities of Daily Living (ADL)

(Hirsch et al., 2003, Baatile et al., 2000, Caglar et al., 2005, Venglar, 2005)
Literature: Yoga’s Effect on Parkinson’s Disease

No research was found that specifically addresses the effect of Yoga on the symptomology of Parkinson’s Disease.
Purpose of the Study

Determine improvement in strength, ROM, balance, gait, depression and anxiety after 8 weeks of participation in a Yoga course
Methodology

Inclusion criteria:
- Follow simple instructions
- Tolerate 1 hr of gentle activity
- Independent sitting balance

Exclusion criteria:
- Medical history that would place them at risk

Approved by the Committee for the Protection of Human Subjects, CSU Sacramento
Participants

- Recruited from the *Parkinson’s Association of Northern California*
- 10 subjects dx’d with PD
- Hoehn and Yahr stage 3 or less
Study Design –
One-way Repeated Measures

Assessment 1 → 8 weeks → Assessment 2
No change in activity

Assessment 2 → 8 weeks → Assessment 3
Adaptive Yoga
Yoga Class Description

- 1 hour class
- 1 time/week
- RYT led class
  - Warm up (10 min)
  - Poses (40 min)
  - Cool down (10 min)
Adaptive Yoga

- Ayurvedic Principles
  - Asanas to calm vata excesses (etiology of Parkinsonism)

- Ananda Yoga
  - Affirmations, relaxation, meditation

- Restorative Yoga
  - Use of props to help people easily achieve and relax into poses
  - Appropriate for older adults and special population embarking on a yoga program

- Adaptive Devices
  - Chair, blocks, strap, blankets

(Jones et al, 2005)
Yoga Asanas - Standing

- Tadasana
- Baddha Hastasana
- Hasta Chakrasana
- Vrksasana
- Trikonasana
- Virabhadrasana
- Ardha Chandrasana
- Adho Mukha Svanasana
- Prasarita Paddotanasana
Yoga Asanas

- **Sitting**
  - Upavasta Konasana
  - Paschimotanasana
  - Marichiyasana

- **Lying:**
  - Supta Padangusthasana
  - Apasana
  - Jathara parivartasana
  - Setu Bandasana
  - Savasana
- **Overall Status of Disease (UPDRS)**
- **Anxiety and Depression** (Hospital Based Anxiety and Depression Scale [HADS])
- **Walking** (Modified Dynamic Gait Index [DGI])
- **Balance** (Berg Balance Scale [BBS])
- **Falls Risk** (Functional Reach)
- **Flexibility** (Sit and Reach LB; Apley’s UE)
- **Functional Strength** (30 Second Chair Stand)
Results
Descriptive Statistics

- **Sex**
  - 3 Females
  - 7 Males

- **Age**
  - mean: 65.7 years
  - Range 43-77 years

- **Average # of Yoga sessions attended**
  - 7.2

- **Hoehn & Yahr**
  - Stage 2, 2.5, or 3
Inferential Statistical Analysis*

Change over time:

- One-way ANOVA with repeated measures (Normally distributed data)
  - Follow up T-test with Bonferroni correction

- Friedman’s two-way ANOVA by ranks (Non-normally distributed data)
  - Follow-up Wilcoxin Signed-Ranks test

*using SPSS software v. 13.0
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Discussion & Conclusion

Statistically significant changes in lower body flexibility, functional strength and depression outcomes measures indicate a positive effect of adapted yoga for persons with Parkinson’s Disease

- No adverse effects
- Yoga program was well received overall:
  - Continued participation by over half of subjects
Discussion & Conclusion

- Further study is justified
- Outcome measures to be considered: Timed Up & Go; Gait velocity test
- Further refinement of postures to address underlying etiology; combined with other Ayurvedic treatments
Questions?

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References


References


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