Motor and Cognitive Benefits of Dance for People with Parkinson’s Disease

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**BACKGROUND**

- Parkinson’s disease (PD) is a chronic neurodegenerative disease which can result in motor, cognitive and emotional impairments¹.
- Current exercise rehabilitation interventions primarily target motor symptoms of PD while ignoring cognitive and emotional deficits that may also contribute to decreased quality of life².
- Our goal was to systematically evaluate the effects of dance on motor, cognitive and emotional functioning in people with PD. We also wanted to explore how dance may impact quality of life.

**METHODS**

**EXPERIMENTAL DESIGN & PROCEDURE**

- People with PD who self-enrolled in dance were recruited and designated to the Intervention group.
  - Participants completed a battery of standardized neuropsychological tests prior to beginning dance classes at time point 1 (T1), participated in 10 dance intervention sessions (1.25 hours/week), then repeated the neuropsychological assessment at time point 2 (T2). Alternate versions of tests were used at T2 when possible.
  - Participants with PD with no prior dance experience were recruited from PD support groups and designated to the Control group.
  - Control participants completed the same battery of neuropsychological tests at T1 and T2, but did not receive the dance intervention.
  - After study completion, Control participants were invited to enroll in Dance for Parkinson’s classes.

**MEASURES**

- **Motor:**
  1. Modified Emory Functional Ambulation Profile
  2. Timed Gait Speed
  3. Standing Balance Test
- **Cognitive:**
  1. Test of Everyday Attention
  2. Action Fluency
  3. Alternate Uses
  4. Digit Span
- **Emotional:**
  1. Geriatric Depression Scale
  2. Falls Efficacy Scale-International
  4. Quality of Life
- **Other measures:**
  1. Hoehn & Yahr (H&Y) Scale – a measure of PD symptom severity
  2. Mini-Mental State Exam
  3. North American Adult Reading Test – used to estimate full scale IQ

**RESULTS**

**Dance for Parkinson’s**

Three-part structure:

1: **Seated warm-up.** Each class began with participants seated in chairs. They completed breathing exercises to center themselves and completed a sun-salutation (adapted from yoga practices).

2: **Standing supported dance movement.** Participants practiced shifting their weight in their chairs by leaning forward/backward and side to side, grounded their feet and transitioned from a seated to standing position using chairs for support. While standing behind the chairs, they practiced shifting their weight from leg to leg and completed balance poses. They practiced sequences of movement in preparation for choreography in the next phase of the class.

3: **Movement across the floor and choreography.** Participants learned individual dance steps and then practiced connecting one movement to the next. If they felt comfortable and if it was safe, they performed sequences across the floor or in the center of the floor without the use of chairs for support. Choreography increased in difficulty every week, building upon the movement sequences learned in previous classes.

**Conclusion: circle dance.** To end each class, participants formed a circle and “passed the pulse”. This allowed participants to acknowledge one another and to acknowledge the shared experience of the dance class.

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