Nursing Solutions: Non-Pharmacologic, Complementary and Alternative Practices in PD

Moderated by:

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Introduction

- Parkinson’s disease is common, chronic, and often spans decades of life
- No current cure
- Conventional medicine very helpful and necessary
- Patients and families often seek additional options
Conventional, Complementary, Alternative or Integrative?

- **Conventional**
  - Traditional medical doctor visit with prescriptions/surgery

- **Complementary**
  - Used in conjunction with conventional

- **Alternative**
  - Used in lieu of conventional

- **Integrative**
  - Conventional and complimentary used together in a coordinator manner

- **Non-pharmacological**
  - Therapeutic measures that are not drugs/medicines ingested, injected, or otherwise absorbed into body
Nationwide use of CAM

- **Oct 1991:** Public law 102-170
  - Allotted $2 million to investigate and evaluate promising unconventional medical practices
- **1998:** National Center for Complementary and Alternative Medicine (NIH) established
  - To evaluate safety and efficacy of CAMs, train researchers, and report to the public
- **2012:** National Health Interview Survey of National Health Services/NIH*
  - 33.2% adults use CAM
  - Spending 30.2 billion yearly on visits to CAM practitioners, purchase products
- **2014:** National Center for Complementary and Integrative Health
- **2017:** $130.5 million allocated in funding
- Currently funding 49 studies

National Center Complementary and Integrative Health

Mind and Body Practices:
- acupuncture, massage, meditation, spinal manipulation, deep-breathing exercises, hypnotherapy, qi gong, tai chi, etc.

Natural Products:
- herbs, botanicals, dietary supplements, probiotics, etc.

What NCCIH studies

- pain
- interactions & safety
- stress, anxiety, & other symptoms
- biological effects
- healthy behaviors
- mechanisms
Objectives for today’s webinar:

• At the conclusion of this webinar, the participant will be able to:
  – Display and understanding of the meaning of non-pharmacological, conventional, complementary, alternative and integrative practices
  – Be familiar with the current research on these practices in the Parkinson’s patient and findings on their impact on quality of life
  – Discuss what practices PD patients are actually using and factors which may influence patients’ choices
Improving Quality of Life Using Non-Pharmacological Treatments in Parkinson’s Disease

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Why Focus on Quality of Life (QOL)?

- **QOL:** An essential outcome in research and practice
  - Medications and surgical interventions having strong efficacy on motor symptoms
    - Equivocal effects on non-motor symptoms
  - Unclear effects of drugs on non-motor symptoms
    - Might interfere with drugs for motor symptoms
    - Might aggravate motor symptoms
  - Treatments or lack of treatments leading to poor QOL
How Did We do It?

**Literature Search**
- PubMed, CINHAL, PsycINFO (9/1/16)
  - “Parkinson’s disease/therapy” and “QOL”
  - Manual search references

**Study Selection**
- Inclusion: 1) in English; 2) QOL as an outcome; 3) experimental design
- Exclusion criteria: 1) drugs/surgical intervention; 2) case study

**Study Appraisal**
- Effective Public Health Practice Project (EPHPP) Quality Assessment Tool for Quantitative Studies

N = 302
N = 14

Removing duplicates
N = 259

Excluded
N = 233

Final N = 26
What Did We Find?

- **Study locations:**
  - N = 1 in France, Iran, Australia, Spain, Sweden, Turkey, Ireland, Belgium, Italy, United Kingdom
  - N = 3 in Brazil
  - N = 4 in Netherlands
  - N = 9 in the United States
What interventions were tested?

• 15 studies (57.7%) tested an exercise intervention
• 1 study per intervention:
  – Acupuncture
  – Neuromuscular electrical stimulation
  – Patient education
  – Reflexology
  – Self-management
  – Spa therapy
  – Cognitive training
  – Cueing training
  – Music therapy
  – Neuromuscular therapy
  – Physiotherapy network
How Was QOL Measured?

- Primary Outcome: 15% (N = 4)
- Secondary Outcome: 8% (N = 2)

Percentage:
- PD Questionnaire 39 (PDQ-39) 77% (N = 20)
- PD QOL scale (PDQL)
How did the interventions affect QOL overall?

- 15 studies (58%) showed that the interventions significantly improved QOL
- 11 studies (42%) reported no effect
How Did Exercise Work with QOL as Primary Outcome? (67%; n = 8 Effective)

<table>
<thead>
<tr>
<th>Level &amp; Quality</th>
<th>Purpose</th>
<th>Study Design</th>
<th>N</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argolo et al., 2013</td>
<td>5-week motor swallowing exercise, twice a day, 5 days a week on swallowing and QOL</td>
<td>Pre-test post-test evaluation</td>
<td>15</td>
<td>SWAL-QOL improved on fear and symptom frequency</td>
</tr>
<tr>
<td>Combs et al., 2011</td>
<td>12-week group boxing training, 3 times a week on balance, mobility, and QOL</td>
<td>Case series, pretest posttest design</td>
<td>6</td>
<td>Improvements PDQL (Earlier improvement in mild PD).</td>
</tr>
<tr>
<td>Combs et al., 2013</td>
<td>12-week, 90-min group boxing training, 3 times a week on function and QOL</td>
<td>A single blinded RCT</td>
<td>31</td>
<td>Improved balance, mobility, QOL, but didn’t differ from control.</td>
</tr>
<tr>
<td>Cruise et al., 2011</td>
<td>Evaluate the benefits of 12-week exercise, twice a week on cognition, mood, and QOL</td>
<td>Nonrandomized trial with waitlist control</td>
<td>28</td>
<td>Improved executive function, but not QOL.</td>
</tr>
<tr>
<td>Dereli &amp; Yaliman, 2010</td>
<td>10-week supervised exercise, 3 times/week with unsupervised home exercise on QOL</td>
<td>Non-randomized, controlled trial</td>
<td>32</td>
<td>Improved PDQL, PD severity, and depression.</td>
</tr>
<tr>
<td>Dibble et al., 2009</td>
<td>12-week high intensity resistance exercise, 3 times a week on bradykinesia and QOL</td>
<td>Case-matched control</td>
<td>20</td>
<td>Improved PDQ-39 and motor function.</td>
</tr>
<tr>
<td>Kelly et al., 2014</td>
<td>16-week high-intensity exercise, 3 days a week on muscle mass and physical capacity</td>
<td>Pre- post-test with non-PA as control</td>
<td>15</td>
<td>Improved PDQ-39 ADLs, emotion, and cognition.</td>
</tr>
<tr>
<td>Pedreira et al., 2013</td>
<td>4-week 40-min Nintendo Wii training, 3 days per week on QOL, compared to PT</td>
<td>RCT</td>
<td>44</td>
<td>Improved PDQ-39, ADL, stigma, social support, communication.</td>
</tr>
<tr>
<td>Van Eijkelen et al., 2008</td>
<td>6-week Nordic walking, 2 times per week on physical inactivity and QOL</td>
<td>Single-group repeated measure</td>
<td>19</td>
<td>Improved TUG, 6MWT; trend towards better QOL.</td>
</tr>
<tr>
<td>Villegas &amp; Israel, 2014</td>
<td>12-week Ai-Chi, twice a week on functional activities, QOL, and posture</td>
<td>Nonrandomized controlled trial</td>
<td>15</td>
<td>Improved function and posture, but not QOL.</td>
</tr>
<tr>
<td>Westheimer et al., 2015</td>
<td>8-week dance intervention, twice a week on motor symptoms and QOL</td>
<td>Pre-test post-test design</td>
<td>14</td>
<td>Improved motor symptoms, but not QOL.</td>
</tr>
<tr>
<td>Yousefi et al., 2009</td>
<td>10-week exercise, 4 times a week on ADL and QOL</td>
<td>Non-randomized, controlled trial</td>
<td>24</td>
<td>Improved PDQL (not emotion) and PD symptoms.</td>
</tr>
</tbody>
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How Did Other Interventions Work With QOL as Primary Outcome?

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<td>Eng et al., 2006</td>
<td>6-month combined tui na massage, acupuncture, and qi qong, weekly on QOL</td>
<td>Pre-test post-test</td>
<td>25</td>
<td>Improved PDQ-39.</td>
</tr>
<tr>
<td>Heijnen et al., 2012</td>
<td>3-5 week adjuvant neuromuscular electronical stimulation on QOL</td>
<td>Double blind RCT</td>
<td>88</td>
<td>Some effects on QOL, no group differences.</td>
</tr>
<tr>
<td>A'Campo et al., 2010</td>
<td>8-weekly 90-minute session of Patient Education Program Parkinson (PEPP) on QOL, well-being</td>
<td>Double blind RCT</td>
<td>64</td>
<td>No significant effects; trend towards improved QOL</td>
</tr>
<tr>
<td>Johns et al., 2010</td>
<td>8 reflexology treatments on well-being</td>
<td>Pre-test post-test design</td>
<td>16</td>
<td>Improved PDQ-39 ADLs, emotional well-being, and cognition.</td>
</tr>
<tr>
<td>Tickle-Degnen et al., 2010</td>
<td>18- and 27-hour self-management rehabilitation on QOL</td>
<td>Double blind RCT</td>
<td>11</td>
<td>Improved PDQ-39 in 18-hour, but not 27 hours of intervention.</td>
</tr>
<tr>
<td>Brefel-Courbon et al., 2003</td>
<td>3-week spa therapy on QOL, motor and psychological functions and cost</td>
<td>Single-blind cross-over RCT</td>
<td>31</td>
<td>Improved PDQ-39 stigma, communication, physical and mental health, motor.</td>
</tr>
</tbody>
</table>
How Did Other Interventions Work With QOL as Secondary Outcome?

<table>
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<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lauhoff et al., 2013</td>
<td>6-week cycle ergometry, once a week on exercise tolerance, balance and QOL</td>
<td>Interrupted time-series</td>
<td>23</td>
<td>Significant effects on balance, functional ability, disability.</td>
</tr>
<tr>
<td>Schenkman et al., 2012</td>
<td>64-week supervised flexibility, balance, function exercise compared to aerobic exercise or home-based exercise</td>
<td>Double-blind RCT</td>
<td>121</td>
<td>Significant improvement in physical function, PD severity.</td>
</tr>
<tr>
<td>Volpe et al., 2013</td>
<td>24-week Irish set dancing, once a week, compared with routine physiotherapy</td>
<td>Single-blind pilot RCT</td>
<td>24</td>
<td>Improved motor disability and gait.</td>
</tr>
<tr>
<td>Paris et al., 2011</td>
<td>4-week cognitive training, 3 times a week on cognition and QOL</td>
<td>Double blind RCT</td>
<td>33</td>
<td>Improved some cognition, no effect on QOL.</td>
</tr>
<tr>
<td>Nieuwboer et al., 2007</td>
<td>6-week home-based cueing program on gait, gait-related activity and QOL</td>
<td>Single-blind crossover RCT</td>
<td>153</td>
<td>Improved gait and balance, trends on improving QOL.</td>
</tr>
<tr>
<td>Pohl et al., 2013</td>
<td>6-week music therapy, twice a week on mobility, cognition, and QOL</td>
<td>Single blinded RCT</td>
<td>18</td>
<td>No group difference on mobility, cognition and QOL.</td>
</tr>
<tr>
<td>Craig et al., 2006</td>
<td>4-week neuromuscular therapy, twice a week on motor and nonmotor symptoms</td>
<td>Single blinded RCT</td>
<td>36</td>
<td>Improved motor symptoms. No group difference in non-motor and QOL.</td>
</tr>
<tr>
<td>Munneke et al., 2010</td>
<td>24-week ParkinsonNet on health-care costs and health outcomes</td>
<td>Double blind cluster RCT</td>
<td>699</td>
<td>No group differences.</td>
</tr>
</tbody>
</table>
What Conclusions Can Be Drawn?

• **What is known?**
  – A variety of non-pharmacological interventions have been studied for their effects on QOL in PD
  – Initial promising results when QOL was treated as the primary outcome
  – Small sample sizes likely counted for the insignificant results
  – Most interventions were only examined once
  – Exercise was most studied, but the exercise doses vary considerably

• **What is the future:**
  – Determine the minimal and optimal effective intervention doses
The conception and initial development of this work was supported by the Edmond J. Safra Visiting Nursing Faculty Program at the Parkinson’s Foundation scholarship award to Bredow and Yu.

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Additional Selected References


Complementary and Alternative Medicine Use in People with Parkinson’s disease

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New Term for Complementary and Alternative Medicine (CAM)

- CAM included mind-body interventions, manual healing methods, diet/nutrition, and biologic treatments.

- Complementary health approaches is a new term adopted by the National Center for Complementary and Integrative Health (NCCIH),

  which includes “a group of diverse medical and health care systems, practices, and products that are not considered to be part of conventional or allopathic medicine.”

Background and Significance

- Parkinson’s disease (PD) is affecting at least one million people in the U.S. and requiring ongoing treatment.
- CAM has been used both alone and in adjunct to pharmacological therapy to manage PD symptoms in some people with PD.
- This area has not been systematically studied in the U.S. in over a decade.
- A better understanding of CAM use would provide a foundation to help both people with PD and providers have a dialogue about CAM use.
Purpose of the Study

• The purpose of this study was two-fold:
  – a) to describe the prevalence, types, and associated factors of CAM use in people with PD and
  – b) to explore reasons for CAM use.
Methods

• A self-administered, cross-sectional survey was utilized.
  – The survey included three sections: socio-demographic, disease-specific, and CAM.
  – CAM section: previous and current use of CAM therapies (e.g., 25 supplements and 29 modalities/therapies).

• Institutional Review Board approval was obtained; Data were collected from community-dwelling individuals with PD between March and December 2015.

• Data Analyses: Descriptive statistics, t-tests, chi-square tests, and a logistic regression were utilized.
Results: Demographic Data

- The response rate was 61.9% (N = 135; 80 males, 55 females).
- Mean age: 69.7 years.
- Mean years of education: 15.8 years.
- More than a half of participants (51.2%) reported their household’s annual income at $60,000 or higher.
- Respondents were mainly from the following U.S. states: Delaware (43%), Indiana (22.2%), Maryland (20%), and Pennsylvania (9.6%).
Results: PD-related Data

- Diagnosed with PD from less than one year to 24 years prior to the survey.
- Thirty-six participants saw more than two health care providers for their PD.
  - The majority of participants saw a neurologist (61.9%) and a movement disorder specialist (50.7%) for their PD treatment.
  - All participants were taking at least one antiparkinsonian medicine ($M = 1.91$).
- The mean of the number of symptoms was 13.03 (3.86 motor and 9.17 non-motor symptoms).
Results

• Prevalence: 74.1% (n = 98) of participants used CAM for either PD or general health.
  – 23% of CAM users used more than 10 CAM.
  – The recommendations for CAM usage from health care providers were higher than the findings of previous studies.
    • PD Specialist (32.6%); primary care providers (28.9%).

• Higher level of education ($b = 0.023$) and treatment by a movement disorder specialist ($b = 1.436$) were significantly related to CAM use ($R^2 = .246$).

• Participants (76.1%) used CAM for general health and to delay the progress of PD.
CAMs Used for PD (n = 98)

- Exercise: 61
- Yoga: 20
- Massage: 19
- Deep breathing: 18
- Vitamin D: 15
- Multivitamins: 14
- Coenzyme Q10: 12
Implications

• Findings of this study suggested CAM usage in the U.S. has grown.
• Nurses and other health care professionals have a role in providing coordinated and safe care for people with PD.
• Further studies on effectiveness and safety of commonly used CAM therapies are warranted.
Acknowledgements and Reference

• Authors of this study wish to thank participants of this study, local PD support groups, National Parkinson Disease Foundation, Michael J. Fox Foundation, and Parkinson’s & Movement Disorders Center of Maryland.

• Funding sources: This study was supported by the University of Delaware, General University Research Award (UDGUR Award ID 14A00557) to Ju Young Shin in 2014-2016.


Any Questions?
**Health Professional Educational Programs**

**Nurse Faculty Program**
Apply to the Edmond J. Safra Visiting Nurse Faculty Program to help us prepare the next generation of nurses to care for the growing population of people with PD.
[parkinson.org/edmondjsafranursing](http://parkinson.org/edmondjsafranursing)

**Physical Therapy Faculty Program**
Learn from internationally recognized PT experts in an intimate classroom setting and help change the future of physical therapy care in Parkinson’s.
*Summer 2018 at Boston University and Oregon Health & Science University*
[parkinson.org/ptfaculty](http://parkinson.org/ptfaculty)
Online Professional Courses

- Nurses
- Physical Therapists
- Occupational Therapists
- Speech and Language Pathologists
Educational Resources

Order Materials
Information about Parkinson’s symptoms, medications, resources and more.
[link to order materials](parkinson.org/books)

Aware in Care Kit
Includes tools and information for people with PD to share with hospital staff during a planned or emergency hospital stay.
[link to Aware in Care Kit](parkinson.org/awareincare)

National Helpline
Available at 1-800-4PD-INFO or [helpline@parkinson.org](mailto:helpline@parkinson.org) Monday through Friday 9:00 AM – 5:00 PM ET.

Podcast: Substantial Matters
New episodes every other Tuesday featuring Parkinson’s experts highlighting treatments, techniques and research.
[link to podcast](parkinson.org/podcast)