Physical Activity in the Workplace for People with Arthritis

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Leigh F. Callahan, PhD
Mary Link Briggs Distinguished Professor of Medicine, Professor of Social Medicine
Director, Osteoarthritis Action Alliance
What is Arthritis?

- Arthritis is a term used to represent more than 100 diseases that affect joints.
- Arthritis is an umbrella term.
- Disability, work loss and medical expenses due to arthritis can be reduced or prevented.
Arthritis Facts

• Arthritis strikes **1 in every 5 adults** and 300,000 children.

• It is America’s **#1 cause of disability.**

• By 2030, an estimated **67 million Americans** will have arthritis.
Arthritis Facts

- **52.5 million** Americans have arthritis.
- **23 million** Americans have activity limitations due to arthritis.
- **1 in 3 working-age adults with arthritis experience work limitations.**
- **8.3 million** Americans have work limitations due to arthritis.

KRISTINA A. THEIS,1 LOUISE MURPHY,2 JENNIFER M. Hootman,1 CHARLES G. HELMICK,4 AND EDWARD YELIN3

Objective. To estimate the national prevalence of arthritis-attributable work limitation (AAWL) among persons ages 18–64 with doctor-diagnosed arthritis and examine correlates of AAWL.
Arthritis is Expensive

Most expensive conditions billed to private insurance (2011)
Physical Activity and Arthritis

• Physical activity is recommended for arthritis management
• Adults with arthritis are less likely to be physically active than adults without arthritis
• Tailored programs can help facilitate physical activity and help people with arthritis exercise safely
How can you help your employees?

• Increase physical activity!
• Walking is good for almost everyone.
• Offer the Arthritis Foundation *Walk With Ease* Program.
Walk with Ease

• Developed in 1999, updated in 2009
• Strives to teach participants how to safely make physical activity part of their everyday life
• CDC approved arthritis intervention
Revision and Evaluation of Group and Self-Directed Formats of the Arthritis Foundation’s Walk with Ease Program

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Mary Altpeter, PhD, MSW, MPA

Thurston Arthritis Research Center
UNC Institute on Aging
University of North Carolina, Chapel Hill
UNC Walk with Ease Team

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- Betsy Hackney
- Laura Houenou
- Kathryn Martin
- Andrew Meier
- Thelma Mielenz
- Margaret Morse
- Britta Schoster
- Todd Schwartz
- Jack Shreffler
Study Aims

To design an easy, inexpensive community-based program in group and self-directed formats that can be effectively implemented in a diverse range of settings.

To conduct a three-phase formative evaluation of the original and adapted WWE program.

To evaluate the pre-post and one-year effectiveness of the revised WWE program in self-directed and group formats.

Funding Source: Centers for Disease Control and Prevention
Grant # MM-0975
Participant Recruitment

31 urban and rural areas across North Carolina

- Family Practice Offices
- Community Centers
- Senior Centers
- Public Health Departments
- Local newspapers and radio stations
- Email listservs
- Arthritis Foundation
Walk With Ease Sites
Inclusion Criteria

• 18 years or older
• Report any type of arthritis or joint pain with moderate to severe limitation in joint motion and/or strength
• English speaker
Group vs. Self-directed Formats: Participants self-selected into either a group format led by a trained instructor or they walked individually.

Enrolled in WWE (n = 462)

- Baseline enrollment (self-directed) (n = 270)
  - Self-directed 6-week follow-up rate: 83.3% (n = 225)
  - Self-directed 1-year follow-up rate: 75.5% (n = 204)

- Baseline enrollment (group) (n = 192)
  - Group format 6-week follow-up rate: 92.7% (n = 178)
  - Group format 1-year follow-up rate: 82.3% (n = 158)
## Participant Demographics

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Self-Directed (n=225)</th>
<th>Group (n=178)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean (s.d.) or %</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age in years</td>
<td>64.9 (11.4)*</td>
<td>70.7 (9.8)*</td>
</tr>
<tr>
<td>Education (% ≤ high school)</td>
<td>25.1*</td>
<td>34.3*</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian, %</td>
<td>72.9</td>
<td>70.8</td>
</tr>
<tr>
<td>African American, %</td>
<td>23.1</td>
<td>25.8</td>
</tr>
<tr>
<td>Other, %</td>
<td>4.0</td>
<td>3.4</td>
</tr>
<tr>
<td>Female, %</td>
<td>88.9</td>
<td>85.4</td>
</tr>
<tr>
<td>BMI ≥ 30%</td>
<td>39.1</td>
<td>36.5</td>
</tr>
</tbody>
</table>

*p < 0.05
At baseline:

- Self-directed participants were younger and better educated than group participants
- Self-directed participants had better scores on all of the performance tests except the step test
- Self-directed participants reported less disability (HAQ) and were more confident in ability to exercise (SEPA)
## Differences in performance-base physical function test results from baseline to 6-week follow-up

<table>
<thead>
<tr>
<th>Performance-Based Physical Function Measure</th>
<th>Format</th>
<th>Difference from Baseline (95% confidence interval)</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lower extremity strength</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One chair stand, sec.</td>
<td>Self-directed</td>
<td>-0.57 (-0.77, -0.37) **</td>
<td>0.31</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>-0.52 (-0.73, -0.31) **</td>
<td>0.35</td>
</tr>
<tr>
<td>Three chair stands, sec.</td>
<td>Self-directed</td>
<td>-1.27 (-1.66, -0.88) **</td>
<td>0.34</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>-1.02 (-1.42, -0.62) **</td>
<td>0.29</td>
</tr>
<tr>
<td><strong>Functional mobility</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal Walking Speed, sec.</td>
<td>Self-directed</td>
<td>-0.24 (-0.39, -0.09) **</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>-0.32 (-0.47, -0.16) **</td>
<td>0.25</td>
</tr>
<tr>
<td>Fast Walking Speed, sec.</td>
<td>Self-directed</td>
<td>-0.11 (-0.21, 0) **</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>-0.25 (-0.36, -0.15) ***</td>
<td>0.18</td>
</tr>
<tr>
<td><strong>Endurance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-Minute Step Test, count</td>
<td>Self-directed</td>
<td>-1.56 (-5, 1.88)</td>
<td>-0.07</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>-1.54 (-5.1, 2.02)</td>
<td>-0.07</td>
</tr>
</tbody>
</table>

*p < 0.05; **p < 0.01, for test that the difference from baseline is zero.

*p < 0.05, for test that the group and self-directed differences are the same
## Differences in performance-based physical function test results from baseline to 6-week follow-up

<table>
<thead>
<tr>
<th>Performance-Based Physical Function Measure</th>
<th>Format</th>
<th>Difference from Baseline (95% confidence interval)</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standing balance and turning ability</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>360° turn right, sec.</td>
<td>Self-directed</td>
<td>-0.3 (-0.43, -0.16)**</td>
<td>0.21</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>-0.43 (-0.58, -0.29)**</td>
<td>0.36</td>
</tr>
<tr>
<td>360° turn left, sec.</td>
<td>Self-directed</td>
<td>-0.34 (-0.46, -0.21)**</td>
<td>0.23</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>-0.43 (-0.57, -0.3)**</td>
<td>0.37</td>
</tr>
<tr>
<td><strong>Balance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right Leg Stance, sec.</td>
<td>Self-directed</td>
<td>1.87 (0.39, 3.35)*</td>
<td>0.17</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>2.78 (1.17, 4.4)**</td>
<td>0.31</td>
</tr>
<tr>
<td>Left Leg Stance, sec.</td>
<td>Self-directed</td>
<td>1.39 (-0.04, 2.83)</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>2.49 (0.93, 4.05)**</td>
<td>0.27</td>
</tr>
</tbody>
</table>

* p < 0.05; **p < 0.01, for test that the difference from baseline is zero.
Differences in self-reported physical function and arthritis symptoms from baseline to 6-week follow-up

<table>
<thead>
<tr>
<th>Self-reported measure</th>
<th>Format</th>
<th>Difference from Baseline (95% confidence interval)</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>[Baseline] - [Follow-up]</td>
<td></td>
</tr>
<tr>
<td><strong>Function</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Assessment Questionnaire</td>
<td>Self-directed</td>
<td>-2.98 (-4.08, -1.87)**</td>
<td>0.23</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>-2.26 (-3.51, -1.01)**</td>
<td>0.16</td>
</tr>
<tr>
<td><strong>Symptoms</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain, VAS (0-100)</td>
<td>Self-directed</td>
<td>-8.40 (-11.65, -5.15)**</td>
<td>0.36</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>-7.82 (-11.48, -4.17)**</td>
<td>0.29</td>
</tr>
<tr>
<td>Fatigue, VAS (0-100)</td>
<td>Self-directed</td>
<td>-5.68 (-9.07, -2.30)**</td>
<td>0.21</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>-6.33 (-10.12, -2.54)**</td>
<td>0.22</td>
</tr>
<tr>
<td>Stiffness, VAS (0-100)</td>
<td>Self-directed</td>
<td>-10.27 (-13.67, -6.87)**</td>
<td>0.40</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>-8.75 (-15.55, -4.94)**</td>
<td>0.32</td>
</tr>
</tbody>
</table>

*p < 0.05; **p < 0.01, for test that the difference from baseline is zero.
### Differences in self-reported psychosocial measures from baseline to 6-week follow-up

<table>
<thead>
<tr>
<th>Self-reported measure</th>
<th>Format</th>
<th>Difference from Baseline (95% confidence interval)</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Psychosocial</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain Arthritis self-efficacy (1-10)</td>
<td>Self-directed</td>
<td>0.19 (-0.11, 0.5)</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>0.49 (0.15, 0.83)**</td>
<td>0.21</td>
</tr>
<tr>
<td>Symptom Arthritis self-efficacy (1-10)</td>
<td>Self-directed</td>
<td>0.26 (-0.02, 0.54)</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>0.4 (0.09, 0.72)*</td>
<td>0.19</td>
</tr>
<tr>
<td>Rheumatology Attitudes Index (0-4)</td>
<td>Self-directed</td>
<td>-0.21 (-0.3, -0.11)**</td>
<td>0.24</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>-0.23 (-0.34, -0.13)**</td>
<td>0.28</td>
</tr>
<tr>
<td>Outcome expectations (1-5)</td>
<td>Self-directed</td>
<td>0.11 (0.04, 0.19)**</td>
<td>0.18</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>0.08 (0, 0.17)</td>
<td>0.15</td>
</tr>
<tr>
<td>Self efficacy for PA (1-5)</td>
<td>Self-directed</td>
<td>0.06 (-0.03, 0.15)</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>0.07 (-0.03, 0.18)</td>
<td>0.10</td>
</tr>
</tbody>
</table>

*p < 0.05; **p < 0.01, for test that the difference from baseline is zero.*
At 6 weeks:

- Participation in the WWE program, both self-directed and group formats, resulted in significant improvement in almost all performance-based measures.

- Similar to performance-based measures, modest to moderate improvement was seen in the self-report measures for both self-directed and group participants.

- There were no significant differences in results between modes of intervention.
Differences in self-reported physical function and arthritis symptoms from baseline to 6-week follow-up and baseline to 1-year follow-up

<table>
<thead>
<tr>
<th>Self-reported measure</th>
<th>Format</th>
<th>6-wk follow-up</th>
<th>1-yr follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Function</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAQ</td>
<td>Self-directed</td>
<td>-2.97 (-4.31, -1.62)**</td>
<td>-2.63 (-3.97, -1.28)****</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>-2.50 (-4.04, -0.96) **</td>
<td>0.78 (-0.76, 2.32)**</td>
</tr>
<tr>
<td><strong>Arthritis symptoms</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Pain, VAS (0-100)</td>
<td>Self-directed</td>
<td>-7.56 (-11.51, -3.6) *</td>
<td>-9.68 (-13.63, -5.73) ****</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>-8.34 (-12.82, -3.87) **</td>
<td>-0.37 (-4.84, 4.11)**</td>
</tr>
<tr>
<td>Fatigue, VAS (0-100)</td>
<td>Self-directed</td>
<td>-5.29 (-9.43, -1.16) *</td>
<td>-2.85 (-6.98, 1.29)</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>-5.74 (-10.38, -1.1) *</td>
<td>0.90 (-3.74, 5.55)</td>
</tr>
<tr>
<td>Stiffness, VAS (0-100)</td>
<td>Self-directed</td>
<td>-9.10 (-13.0, -5.21) **</td>
<td>-9.73 (-13.62, -5.84) ****</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>-8.98 (-13.38, -4.57) **</td>
<td>-1.54 (-5.95, 2.87)**</td>
</tr>
</tbody>
</table>

*p < 0.05; **p < 0.01, for test that the difference from baseline is zero.
*p<0.05; **p<0.01, for test that the group and self-directed differences are the same
### Differences in self-reported psychosocial outcomes from baseline to 6-week follow-up and baseline to 1-year follow-up

<table>
<thead>
<tr>
<th>Self-reported measure</th>
<th>Format</th>
<th>Difference (95% confidence interval)</th>
<th>6-wk follow-up</th>
<th>1-yr follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Psychosocial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain Arthritis self-efficacy (1-10)</td>
<td>Self-directed</td>
<td>0.09 (-0.25, 0.43)**</td>
<td>0.34 (0, 0.68)*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>0.66 (0.28, 1.04)****</td>
<td>0.39 (0.01, 0.78)*</td>
<td></td>
</tr>
<tr>
<td>Symptom Arthritis self-efficacy (1-10)</td>
<td>Self-directed</td>
<td>0.21 (-0.11, 0.52)</td>
<td>0.42 (0.1, 0.73)**</td>
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</tr>
<tr>
<td></td>
<td>Group</td>
<td>0.53 (0.17, 0.89)**</td>
<td>0.36 (-0.01, 0.72)</td>
<td></td>
</tr>
<tr>
<td>Rheumatology Attitudes Index (RAI) (0-4)</td>
<td>Self-directed</td>
<td>-0.19 (-0.3, -0.08)**</td>
<td>-0.24 (-0.35, -0.13)***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>-0.23 (-0.36, -0.1) **</td>
<td>-0.08 (-0.21, 0.05)*</td>
<td></td>
</tr>
<tr>
<td>Outcome Expectations (OEE) (1-5)</td>
<td>Self-directed</td>
<td>0.12 (0.03, 0.21) *</td>
<td>0.05 (-0.04, 0.14)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>0.13 (0.02, 0.24) *</td>
<td>-0.04 (-0.15, 0.07)</td>
<td></td>
</tr>
<tr>
<td>Self-efficacy for Physical Activity (PA) (1-5)</td>
<td>Self-directed</td>
<td>0.07 (-0.05, 0.18)</td>
<td>-0.04 (-0.16, 0.07)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>0.02 (-0.11, 0.16)</td>
<td>-0.22 (-0.36, -0.09)**</td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.05; **p < 0.01, for test that the difference from baseline is zero.
*p<0.05; **p<0.01, for test that the group and self-directed differences are the same
At one year:

- There are several measures where the difference from baseline remains significant for the self-directed participants, becomes non-significant for group participants, and there is a significant difference between results for the two modes (HAQ, Pain VAS, Stiffness VAS, and RAI).

- The self-directed participants seem to hold onto gains or even improve while the group participants seem to lose ground.
Special Thanks!

- Peter Blanchid
- Michelle Boutaugh
- Rebecca Farnlof
- Research Assistants
- WWE Instructors
- NC Area Agencies on Aging
- Collaborating facilities
- NC Arthritis Program
- Arthritis Foundation
- Program Participants
Effect of a Six-Week Walking Program on Work Place Activity Limitations Among Adults With Arthritis

KIRSTEN A. NYROP, BRIAN L. CHARNOCK, KATHRYN R. MARTIN, JENNIFER LIAS, MARY ALTPETER, AND LEIGH F. CALLAHAN

Objective. To conduct an exploratory evaluation of the impact of the Arthritis Foundation's evidence-based Walk With Ease (WWE) program on work place activity limitations of adults with self-reported or doctor-diagnosed arthritis.

Methods. WWE participants who were self-identified as "employed" completed the Workplace Activity Limitation Scale (WALS) at 6-week (postintervention; n = 94) and 1-year followup (n = 69). Paired t-tests were used to determine whether reduced work place limitations were reported at 6 weeks and maintained at 1-year followup.

Results. Participants were on average age 55 years, 48% women, and 61% white. The mean body mass index was 32 kg/m², and 31% had more than a high school education. Overall WALS scores improved significantly from a mean ± SD of 6.7 ± 3.99 at baseline to 5.5 ± 4.20 at 6-week followup (P < 0.001, effect size 0.30). Improvements were maintained at 1-year followup, i.e., no change from 6-week followup (P = 0.97). Work place activities reported by participants as "some" or "a lot" of difficulty at baseline, i.e., "crouch/bend/kneel/work in awkward positions," "stand for long periods,"
Enrolled in WWE (n = 462)

Employed and completed WALS pre and post WWE (n=94)

Employed at one year and completed WALS pre, post 6wk and 1 year WWE (n=67)

Group participants = 75, Self-Directed = 19

Group participants = 52, Self-Directed = 15
<table>
<thead>
<tr>
<th>Variable</th>
<th>Cronbach's α</th>
<th>Mean ± SD</th>
<th>95% CI</th>
<th>P</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline (pre) and 6-week followup (post) (n = 94)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WALS pre</td>
<td>0.80</td>
<td>6.74 ± 3.99</td>
<td>5.93, 7.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WALS post</td>
<td>0.82</td>
<td>5.53 ± 4.20</td>
<td>4.67, 6.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-post WALS change</td>
<td>n/a</td>
<td>1.21 ± 2.97</td>
<td>0.60, 1.82</td>
<td>&lt; 0.001</td>
<td>0.30</td>
</tr>
<tr>
<td>1-year followup (n = 67)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WALS post</td>
<td>0.77</td>
<td>5.20 ± 3.57</td>
<td>4.34, 6.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WALS 1-year</td>
<td>0.81</td>
<td>5.27 ± 4.04</td>
<td>4.31, 6.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post–1-year WALS change</td>
<td>n/a</td>
<td>0.07 ± 3.80</td>
<td>-0.93, 0.84</td>
<td>0.87</td>
<td>0.02</td>
</tr>
</tbody>
</table>

* WALS = Workplace Activity Limitation Scale; 95% CI = 95% confidence interval; n/a = not applicable.
**Table 2. Individual Workplace Activity Limitation Scale items at baseline: proportion reporting no difficulty, some difficulty, and a lot of difficulty**

<table>
<thead>
<tr>
<th>Variable</th>
<th>No, no. (%)</th>
<th>Some, no. (%)</th>
<th>A lot, no. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get to/from work, on time</td>
<td>72 (78.26)</td>
<td>16 (17.39)</td>
<td>4 (4.35)</td>
</tr>
<tr>
<td>Get around the work place</td>
<td>60 (65.93)</td>
<td>29 (31.87)</td>
<td>2 (2.20)</td>
</tr>
<tr>
<td>Sit for long periods of time</td>
<td>41 (44.57)</td>
<td>41 (44.57)</td>
<td>10 (10.87)</td>
</tr>
<tr>
<td>Stand for long periods of time</td>
<td>34 (37.36)</td>
<td>39 (42.66)</td>
<td>18 (19.78)</td>
</tr>
<tr>
<td>Lift, carry, move objects</td>
<td>23 (25.56)</td>
<td>54 (60.00)</td>
<td>13 (14.44)</td>
</tr>
<tr>
<td>Work with hands</td>
<td>44 (47.31)</td>
<td>48 (51.61)</td>
<td>1 (1.08)</td>
</tr>
<tr>
<td>Crouch, bend, kneel, work in awkward positions</td>
<td>15 (17.65)</td>
<td>32 (37.65)</td>
<td>38 (44.70)</td>
</tr>
<tr>
<td>Reach</td>
<td>54 (57.45)</td>
<td>36 (38.30)</td>
<td>4 (4.26)</td>
</tr>
<tr>
<td>Work schedule, hours</td>
<td>65 (69.15)</td>
<td>27 (28.72)</td>
<td>2 (2.13)</td>
</tr>
<tr>
<td>Required pace of work</td>
<td>65 (69.89)</td>
<td>28 (30.11)</td>
<td>0 (0.00)</td>
</tr>
<tr>
<td>Meet current job demands</td>
<td>60 (64.52)</td>
<td>33 (35.48)</td>
<td>0 (0.00)</td>
</tr>
<tr>
<td>Concentrate, keep your mind on the job</td>
<td>62 (67.39)</td>
<td>29 (31.52)</td>
<td>1 (1.09)</td>
</tr>
<tr>
<td>Variable</td>
<td>Mean ± SD change</td>
<td>95% confidence interval</td>
<td>P</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>------------------</td>
<td>-------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Get to/from work, on time</td>
<td>0.03 ± 0.42</td>
<td>-0.05, 0.13</td>
<td>0.44</td>
</tr>
<tr>
<td>Get around work place</td>
<td>0.09 ± 0.46</td>
<td>-0.01, 0.18</td>
<td>0.07</td>
</tr>
<tr>
<td>Sit for long periods of time</td>
<td>0.07 ± 0.61</td>
<td>-0.06, 0.19</td>
<td>0.31</td>
</tr>
<tr>
<td>Stand for long periods</td>
<td>0.24 ± 0.76</td>
<td>0.08, 0.40</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>Lift, carry, move objects</td>
<td>0.25 ± 0.69</td>
<td>0.10, 0.39</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Work with your hands</td>
<td>0.11 ± 0.50</td>
<td>0.00, 0.21</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Crouch, bend, kneel, work in awkward positions</td>
<td>0.13 ± 0.72</td>
<td>-0.02, 0.28</td>
<td>0.09</td>
</tr>
<tr>
<td>Reach</td>
<td>0.13 ± 0.56</td>
<td>0.01, 0.24</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Work schedule, hours</td>
<td>0.00 ± 0.47</td>
<td>-0.10, 0.10</td>
<td>1.00</td>
</tr>
<tr>
<td>Required pace of work</td>
<td>0.00 ± 0.47</td>
<td>-0.10, 0.10</td>
<td>1.00</td>
</tr>
<tr>
<td>Meet current job demands</td>
<td>0.02 ± 0.39</td>
<td>-0.06, 0.10</td>
<td>0.59</td>
</tr>
<tr>
<td>Concentrate, keep your mind on your job</td>
<td>0.15 ± 0.49</td>
<td>0.04, 0.25</td>
<td>&lt; 0.01</td>
</tr>
</tbody>
</table>
Bringing Walk With Ease to the Workplace Study

Funded by the Mid-Atlantic Region Arthritis Foundation
9/1/2011-8/31/2013
Principal Investigator, Mary Altpeter, PhD
Co-Investigators, Laura Linnan, ScD, Leigh F. Callahan, PhD
Study Overall Goal

• To conduct a feasibility study that will allow us to build on the strengths of the self-directed format of the WWE program and to work collaboratively with employees/employers to test how best to deliver and integrate the program within four small business worksites.”
Study Specific Aims

- Conduct formative research to
  - examine factors affecting the delivery of the self-directed format of WWE within worksite settings
  - create delivery protocols
  - help develop workplace policy recommendations that augment the delivery of WWE

- Evaluate the feasibility and acceptability of implementing the self-directed format of WWE program

- Secondary Aim - Evaluate program benefits
Study Population

• Management and employees within 4 *diverse* workplaces
  – Sporting goods manufacturer (2 sites)
  – Regional bank (4 sites)
  – City school system (6 sites)
  – University (2 sites)

• *Different* types of
  – workers, work schedules, facilities, resources, experience with health promotion
Thinking Behind Sampling Design

- Reveal barriers and facilitators to WWE implementation not available from a single worksite or employee level

- Examine within- and between-site variation in perceptions among management and employees within different worksites
Study Steps- Phase 1

- data collection tools and consent forms designed
- IRB (human subjects protection) approvals secured
- 4 worksites recruited
- interviews with key workplace decision-makers/stakeholders conducted and data analyzed
- focus groups with employees conducted and data analyzed
Study Steps- Phase 2

• WWE delivery protocols produced and disseminated to worksites

• Recruitment materials prepared and disseminated

• On-site program coordinators oriented
Study Steps - Phase 3

- 25 employees/site enrolled
- Distribution of pre/post assessments completed
- 4 month follow-up data collected
Study Steps- Phase 4

- Data analyzed
- Managers re-interviewed
- Final reports sent to sites
- Site meetings conducted
- Complimentary WWE Workbooks distributed
- Project report
Lessons Learned

• Across sites, strong interest in WWE expressed by employees and management

• When marketing WWE, be prepared to address health and health care costs

• Discuss with management their philosophy about offering health promotion programming; educate about benefits; ask about conducting assessment of employee interests in health promotion
Lessons Learned (cont’d)

• Ascertain if the worksite has a program coordinator

• Have a contingency plan for program coordination when there is staff and/or management; Have written mechanism whereby management support and agreed upon activities can easily be shared with new coordinator

• Discuss with coordinator any challenges/concerns about using the materials; lay out plan of when and how the materials and communications will be handled.
Arthritis Foundation Walk with Ease Worksite 2014 Mini-Grant Program

- Offered to 9 AF Regions and 12 State Health Departments
- Able to apply for up to $10,000
- Encouraged to deliver WWE in 3 or more worksites
- Large single site (>10,000 employees) employers also acceptable
Goals

- Increase WWE dissemination and participation through worksites
- Obtain information about
  - Worksite partners recruited
  - Worksite Demographics (company size, type, number of locations)
  - Current Wellness initiatives and/or programming at the worksite
  - Reasons for selecting Walk With Ease
  - Walk With Ease implementation within the worksite
  - Participant recruitment
  - Program format selection (self-directed or group)
Goals (cont’d)

• Identify
  o Program sustainability methods
  o Best practices in disseminating the program within worksites and
  o increasing program reach

• Learn how AF regions can engage and support partners
• Obtain feedback on guides: *Walk With Ease in the Workplace Implementation Guide: Worksite Coordinators*, *Walk With Ease in the Worksite Implementation Guide: AF Staff*, and *Walk With Ease Next Steps*
Recipients of the 2014 Walk With Ease Mini-Grant

• Florida Chapter
• Great West Region
• Heartland Region
• Kansas Department of Health
• Mid-Atlantic Region
• New England Region
• Pacific Region (2 awards)
• Upper Mid-West Region
Workplace Recipients

- AAA Minneapolis, MN
- Barnes-Jewish/Christian (BJC) Learning Centers, MO
- County of Missoula, MN
- Discover Los Angeles, CA
- EMC Corporation, MA
- Fremont Medical Center, NE
- Hawaiian Telcom, HI
- Illinois Toolworks (ITW), IL
- Kansas Department of Health, KS
- Keck University of Southern California Medical Center, CA
- Marion County, OR
- Reno County, KS
- SCANA Energy, SC
- Shands Jacksonville, a medical system of the University of Florida, FL
- Tealwood Care Center, MN
- University of California (CA), Davis, CA
- University of CA, Los Angeles, CA
- University of CA Riverside, CA
- University of CA San Diego, CA
- University of CA Santa Barbara, CA
- University of CA Santa Cruz, CA
- University of Kansas School of Medicine, KS
- Unum US, ME
- Viking Tool and Drill, MN
- Virginia Department of Health, VA
- W.L. Gore and Associates, DE & AZ
- Walmart, MA & RI
- Washington Hospital, CA
Walk With Ease Format

- 53.6% Self-Directed enhanced (led 1-2 classes a week and participants also walked on own)
- 39.2% Self-Directed (participants walk on own 3 times a week)
- 21.4% Group Format (leader led 3 times a week)
Walk With Ease Mini- Grant Evaluation

- Participant questionnaire
- Worksite Coordinator/leader questionnaire
- AF Region and State Health Department questionnaire
Participant Results
Reasons for Employee Participation

What was your main reason for participating in the program?

- Improve my health: 70.0%
- Motivation to become active: 50.0%
- Incentives: 10.0%
- Accountability: 20.0%
- Social: 10.0%
- Educational: 0.0%
Physiological and Psychological Improvements

- Reduced workplace limitations: 8.30%
- Increased flexibility: 20.70%
- Increased knowledge: 30.20%
- Weight loss: 24.90%
- Increased balance: 7.10%
- Increased energy level/mood: 63.90%
- Increased strength: 17.20%
- Increased stamina: 35.50%
- Decreased pain: 16.00%
- Increased Walking Frequency: 71.00%

Increased walking frequency, decreased pain, increased stamina, increased strength, increased energy level/mood, increased balance, weight loss, increased knowledge, increased flexibility, reduced workplace limitations.
# Program Component Satisfaction

<table>
<thead>
<tr>
<th>Category</th>
<th>Very Satisfied</th>
<th>Satisfied</th>
<th>Neither Satisfied or Dissatisfied</th>
<th>Dissatisfied</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Program</td>
<td>59.76%</td>
<td>36.09%</td>
<td>3.55%</td>
<td>0.59%</td>
<td>0.00%</td>
</tr>
<tr>
<td>WWE Book</td>
<td>46.15%</td>
<td>36.69%</td>
<td>14.20%</td>
<td>0.59%</td>
<td>2.37%</td>
</tr>
<tr>
<td>Group Walking Experience</td>
<td>23.67%</td>
<td>14.79%</td>
<td>7.69%</td>
<td>0.00%</td>
<td>53.85%</td>
</tr>
<tr>
<td>Walking Experience (on own)</td>
<td>56.21%</td>
<td>34.32%</td>
<td>2.37%</td>
<td>0.00%</td>
<td>7.10%</td>
</tr>
<tr>
<td>Incentives</td>
<td>39.64%</td>
<td>43.20%</td>
<td>13.02%</td>
<td>0.00%</td>
<td>4.14%</td>
</tr>
<tr>
<td>Walking time/distance</td>
<td>48.52%</td>
<td>49.11%</td>
<td>1.18%</td>
<td>0.59%</td>
<td>0.59%</td>
</tr>
<tr>
<td>Motivational Tips and Tools</td>
<td>49.11%</td>
<td>39.05%</td>
<td>8.28%</td>
<td>0.59%</td>
<td>2.96%</td>
</tr>
<tr>
<td>Reading Components</td>
<td>43.20%</td>
<td>40.24%</td>
<td>10.65%</td>
<td>1.78%</td>
<td>4.14%</td>
</tr>
<tr>
<td>Self-Tests &amp; Assessments</td>
<td>33.73%</td>
<td>29.59%</td>
<td>17.16%</td>
<td>0.59%</td>
<td>18.93%</td>
</tr>
<tr>
<td>Diary Component</td>
<td>30.18%</td>
<td>33.14%</td>
<td>19.53%</td>
<td>0.59%</td>
<td>16.57%</td>
</tr>
<tr>
<td>Helped me reach my goals</td>
<td>37.87%</td>
<td>47.34%</td>
<td>10.06%</td>
<td>0.59%</td>
<td>4.14%</td>
</tr>
<tr>
<td>Group Leader</td>
<td>26.04%</td>
<td>13.02%</td>
<td>6.51%</td>
<td>0.00%</td>
<td></td>
</tr>
</tbody>
</table>
Participant Testimonials

- “I walked in the evenings after work and included my husband. It was a good exercise benefit, but equally as good for our marriage as we made time for ourselves away from kids and the hectic life we normally lead.”

- “My puppy appreciated me being on the challenge!”

- “Walk With Ease gave me the incentive to start walking again and to lose weight. I will continue with my own tracking program now. My incentive was watching the weight come off with a life change in eating habits as well.”

- “This was the incentive I needed to get walking more regularly. It was great to meet up with others who wanted the same. It has formed some very nice friendships in addition to health benefits.”

- “My children have joined me so I am increasing their activity as well - bravo to me and them!”
Worksite Coordinator Results
Main Reasons for Implementing WWE in Their Worksites

- It was a turnkey program. The resources given to the companies to execute program
- Welcoming program that appealed to all fitness levels and participants.
- It was an inclusive program that not only addressed physical activity, but also health education.
- Arthritis Foundation reputation and support.
- Walk With Ease was an evidence-based program
Main Reasons for Worksite Coordinators to Encourage High Participation

1) Senior leadership support or endorsement
2) Implementation of an incentive strategy
3) Constant communication with employees
Did the Walk With Ease in the worksite program increase participation in your employee wellness programs at your facility?

- Yes: 87.5%
- No: 12.5%
Worksite Coordinator Testimonials

• “The program was simple, easy to follow and provided attainable goals for participants. Encouraged walking at each participant's own pace and was not intimidating. A great way to start an exercise routine, especially if one hasn't been done recently.”

• We liked that it made us focus specifically on those employees that be affected by Arthritis and not able to participate in the higher level activities.”

• The simplicity but well thought out structure made this program relatively easy to implement and explain to participants. Thanks!”

• Walk With Ease removed the barrier of aches/pains and provided participants with the information needed to be successful in increasing physical activity.”
Worksite Coordinator Testimonials

• “This program was VERY simple to implement and the local Arthritis Foundation contacts were amazing! They both went above and beyond to make sure we had everything we needed to pull the program together. We would love to offer again.”

• “The Walk With Ease Program was a great way for our facility to promote physical wellness with our staff. Our staff was eager to take on the extra six week challenge - and it was great to watch the teamwork and dedication that they had during that time. We will now strive to maintain that eagerness for physical wellness and hope to continue with a walking plan for our staff and tenants.”
Ingredients for Success

• Identify a strong wellness champion
• Easy, structured program
• Variety of marketing methods
  o Print materials
  o Wellness Committees
  o Incentives
  o Email
  o Social Media
  o Word of Mouth
Worksites Should Partner with the Arthritis Foundation

- AF will help worksites plan implementation of the *Walk With Ease* Program.
- AF can provide worksites with the following:
  - A worksite coordinator guide
  - Marketing material
  - Incentives
  - Participant engagement component
  - Support
AF WWE Contact

Shannon Coakley
Worksite Wellness Coordinator
Arthritis Foundation National Office
Atlanta, GA
1-404-965-7733
scoakley@arthritis.org
www.arthritis.org
OAAA at UNC

Leigh F. Callahan, PhD
OAAA Director

Kirsten R. Ambrose, MS, CCRC
OAAA Program Manager
First Step to Address OA:
A National Public-Health Agenda for Osteoarthritis

- CDC/AF collaboration + 70 stakeholders
- Three overall goals:
  - Ensure availability of evidence-based intervention strategies.
  - Establish supportive policies, communication initiatives and strategic alliances.
  - Initiate research to better understand the burden of OA, risk factors and effective strategies for intervention.
Second Step to Address OA

www.oaaction.unc.edu

Outreach to health professionals and community-based programs to bring evidenced-based wellness interventions to people with arthritis or to prevent osteoarthritis.
OSTEOARTHRITIS ACTION ALLIANCE (OAAA)

• Osteoarthritis Action Alliance (OAAA) is a national Alliance of concerned organizations
• 2011 – Arthritis Foundation (AF) mobilizes the OAAA and recruits over 30 member organizations
• 2014 – Management of OAAA activities is transferred to the Thurston Arthritis Research Center (TARC) at the University of North Carolina School of Medicine
• OAAA is currently funded by the Centers for Disease Control and Prevention (CDC)
OSTEOARTHRITIS ACTION ALLIANCE (OAAA)

Vision:
We envision a nation where osteoarthritis is prevented and managed to improve the quality of life for Americans of all ages.

Mission:
The mission of the Osteoarthritis Action Alliance is to prevent and control osteoarthritis by promoting effective programs, policies, and communication strategies.
OAAA GOALS

• **Challenge policymakers** at all levels in all sectors to make OA a public health priority as reflected in policy decisions and funding allocations

• **Foster communities** to build capacity to prevent or manage OA by disseminating information and resources about effective community interventions (i.e., evidence based interventions, environmental and policy changes)

• **Mobilize health systems and health care professionals** to proactively identify and comprehensively address OA in their clinical care (i.e., decision prompts, pain management, physical activity as a vital sign, referral to community based programs)

• **Educate people with osteoarthritis**, their family/friends, and caregivers about ways to improve quality of life through clinical care and self-management strategies (i.e., physical activity, weight management, and self-management education)
Environmental and Policy Strategies to Increase Physical Activity Among Adults With Arthritis
Implementation Guide

Purpose

THIS GUIDE IS DESIGNED TO ENGAGE A BROAD ARRAY OF AGENCIES AND ORGANIZATIONS AS PARTNERS IN ESTABLISHING ENVIRONMENTAL AND POLICY STRATEGIES FOR INCREASING PHYSICAL ACTIVITY AMONG ADULTS WITH ARTHRITIS.

Regular physical activity is important for all adults and those with arthritis are no exception. Physical activity has been proven to decrease pain, delay the onset of disability, improve physical functioning, mood and independence, and enhance quality of life, aerobic capacity and muscle strength. Despite these significant benefits, adults with arthritis have higher rates of physical inactivity than those without arthritis.¹
Arthritis Matters

Arthritis is the most common cause of disability in the United States, affecting 50 million adults. Arthritis costs our nation $128 billion each year, $47 billion of that cost is due to lost earnings. Musculoskeletal conditions, including arthritis, are the most common causes of work limitation among U.S. adults.

Physical activity is highly recommended for adults with arthritis. It can decrease pain, delay the onset of disability, and improve physical functioning, mood, and independence. It also enhances quality of life, aerobic capacity, and muscle strength.

People with arthritis can safely engage in physical activity. A variety of evidence-based physical activity programs have been tested and proven appropriate, safe and effective at relieving symptoms for adults with arthritis.

Unfortunately, far too few adults with arthritis are active enough. Adults with arthritis are less likely to be physically active than those without the disease and this gap widens even further for adults with arthritis who also have diabetes or heart disease, or are obese.

Get Involved

Now...

- Set workplace wellness goals to increase physical activity among adults with physical limitations such as arthritis, in addition to supporting other healthy behaviors such as smoking cessation and weight/nutrition.
- Offer opportunities and scheduling flexibility so all employees can engage in physical activity during the work day.
- Use audits or walkability checklists to assess whether workplace walking trails, paths, and indoor walking routes are accessible to persons with arthritis.

Over time...

Establish a worksite wellness program that includes:

- At least one evidence-based, arthritis-appropriate physical activity intervention in your schedule of offerings (see back page for recommendations).
- Physical activities that are inclusive of adults with arthritis but not branded specifically for arthritis.
What Questions Do You Have?