Women’s Lifestyle Physical Activity Program: African-American women’s long-term maintenance of physical activity

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Health benefits are obtained from regular sustained physical activity.

To date, consensus on what maintenance of physical activity means has not been fully reached.

Maintenance of physical activity is commonly defined as: participants achieved a pre-prescribed level of physical activity at 2 points of time often at the end of an intervention and 6 months after cessation of the intervention.

Marcus (2000) found of 100 physical activity intervention studies only 2 followed through 24 months of follow-up.
A follow-up systematic review by Fjeldsoe (2011) identified 15 interventions that looked at maintenance (M= 5.4 months follow-up; Range = 3 to 24 months follow-up)

We examined 14 physical activity interventions with African American women

- Only 3 looked at maintenance after cessation of the intervention (6, 12, 18 months)
- All 3 showed improvements in physical activity at the end of the intervention, but they diminished at follow-up
BACKGROUND: Intervention

The Women’s Lifestyle Physical Activity Program (48 weeks)

Six group visits guided by Social Cognitive Theory (2 hours, culturally targeted/tailored)

- Individual component:
  - Lifestyle physical activity prescription (with a goal of increasing baseline steps by 3,000)

- Group component:
  - Role modeling
  - Problem solving
**BACKGROUND: Intervention**

**Telephone contacts** (designed to keep connected between group visits)

- Personal calls (PC)
  - Motivational interviewing (11)
- Automated telephone calls (AC)
  - Barrier tips (11)
- No telephone calls
• To determine midlife African American women’s long-term maintenance of physical activity following the end of the 48-Week Women’s Lifestyle Physical Activity program

• To determine if maintenance differed by telephone condition
METHODS: Design

• 3 treatment conditions
  – Group only
  – Group + Personal Calls
  – Group + Automated Calls

• 6 sites
  – 3 waves per site
  – A different treatment condition for each wave
  – Order of treatment conditions within site randomly counterbalanced
METHODS: Sites

- 3 community health centers
- 3 community hospitals
METHODS: Subjects

Inclusion
- Female
- African American
- Sedentary
- Aged 40 to 65 years
- Without disabilities that would prevent regular participation in physical activity

Exclusion
- Major signs or symptoms suggestive of pulmonary or cardiovascular disease
- Blood pressure $\geq 160/100$ mmHg
- Self-reported history of myocardial infarction, stroke, HbA$_{1c}$ $\geq 9$
METHODS: Measures

Adherence to lifestyle physical activity

Community Healthy Activities Model Program (CHAMPS)

– Overall moderate leisure time and household activities (30 items)
– Retrospective past two weeks
– Duration and MET value
– Calculated minutes per week spent in:
  • Overall moderate-to-vigorous physical activity
  • Leisure time moderate-to-vigorous physical activity
  • Walking
METHODS: Protocol

- Starting time for the 6 sites was staggered by one month
- Time between waves at each site was one year
- During the intervention phase, physical activity questionnaires were obtained at baseline, 24 weeks, and 48 weeks
- During the long-term maintenance phase, follow-up questionnaires were mailed to women staggered by site, in the same order as the start of the intervention
METHODS: Design

• 4 Assessment times
  – Baseline
  – 24 weeks
  – 48 weeks
  – Long-term Follow-up

  • Timing ranged from 1-3 years following 48-week assessment
METHODS: Timing of Assessments by Wave and Site
ANALYSIS: Timing of Assessments

- Wave 1
- Wave 2
- Wave 3

Wave and Site

Intervention Phase

Long-Term Maintenance Phase

Time (Months) Centered at 48 Weeks after Start of First Group
RESULTS: Consort Sheet

288 Started the intervention

- 95 Group visit
  - Intervention
    - 48-week assessment
    - 88 (92%) Completed
  - Maintenance assessment
    - 86 (91%) Completed
    - 2 active refusal
    - 3 passive refusal
    - 4 No contact

- 97 Group visit + AC
  - Intervention
    - 48-week assessment
    - 86 (89%) Completed
  - Maintenance assessment
    - 86 (89%) Completed
    - 1 active refusal
    - 7 passive refusal
    - 3 No contact

- 96 Group visit + PC
  - Intervention
    - 48-week assessment
    - 86 (90%) Completed
  - Maintenance assessment
    - 82 (85%) Completed
    - 2 active refusal
    - 10 passive refusal
    - 2 No contact
RESULTS: Completion Of Long-term Follow-up

<table>
<thead>
<tr>
<th>Demographic Variables</th>
<th>Completed (n=254; 88.2%)</th>
<th>Not Completed (n=34; 11.8%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years M(SD)**</td>
<td>53.5 (6.5)</td>
<td>49.8 (5.9)</td>
</tr>
<tr>
<td>Education, college graduate or higher (%)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>92.3</td>
<td>7.7</td>
</tr>
<tr>
<td>No</td>
<td>84.1</td>
<td>15.9</td>
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<tr>
<td>Income (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;$40,000</td>
<td>86.4</td>
<td>13.6</td>
</tr>
<tr>
<td>≥$40,000</td>
<td>89.4</td>
<td>10.6</td>
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<tr>
<td>Employed (%)</td>
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<td></td>
</tr>
<tr>
<td>Yes</td>
<td>89.2</td>
<td>10.8</td>
</tr>
<tr>
<td>No</td>
<td>85.1</td>
<td>14.9</td>
</tr>
<tr>
<td>Married/living with partner (%)</td>
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<td></td>
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<tr>
<td>Yes</td>
<td>89.1</td>
<td>10.9</td>
</tr>
<tr>
<td>No</td>
<td>87.6</td>
<td>12.4</td>
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<tr>
<td>Children under 18 in household (%)</td>
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<tr>
<td>Yes</td>
<td>84.9</td>
<td>15.1</td>
</tr>
<tr>
<td>No</td>
<td>90.1</td>
<td>9.9</td>
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* p<.05  **p<.01
## RESULTS: Completion Of Long-term Follow-up

<table>
<thead>
<tr>
<th>Design Factor</th>
<th>Completed (n=254; 88.2%)</th>
<th>Not Completed (n=34; 11.8%)</th>
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<tbody>
<tr>
<td><strong>Condition (%)</strong></td>
<td>Group Only</td>
<td>90.5</td>
</tr>
<tr>
<td></td>
<td>Group+PC</td>
<td>85.4</td>
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<td></td>
<td>Group+AC</td>
<td>88.7</td>
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<tr>
<td><strong>Wave (%)</strong></td>
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<td>81.4</td>
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<tr>
<td></td>
<td>2</td>
<td>86.5</td>
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<td></td>
<td>3</td>
<td>96.8</td>
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<tr>
<td><strong>Site (%)</strong></td>
<td>1</td>
<td>87.2</td>
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<tr>
<td></td>
<td>2</td>
<td>80.7</td>
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<td></td>
<td>6</td>
<td>82.0</td>
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<td><strong>Sessions Attended M(SD)</strong></td>
<td>4.8 (1.3)</td>
<td>3.3 (1.6)</td>
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</table>

**p<.01**
ANALYSIS: Discontinuous Growth

Outcome (e.g., MVPA)

Intervention Phase

Long-Term Maintenance Phase

Time (Months) Centered at 48 Weeks after Start of First Group
RESULTS: Total Moderate-Vigorous Physical Activity

Time (Months) Centered at 48 Weeks after Start of First Group

Intervention Slope: 16.98, \( p < .001 \)
Maintenance Slope: -0.41, \( ns \)
RESULTS: Leisure-time Moderate-Vigorous Physical Activity

Time (Months) Centered at 48 Weeks after Start of First Group

Intervention Slope: 16.34, \( p < .001 \)
Maintenance Slope: -1.67, \( p = .05 \)

95% CI
RESULTS: Walking

Intervention Slope: 22.72, \( p < .001 \)
Long-term Maintenance Slope: -3.97, \( p < .001 \)
• The intervention increased physical activity and maintained the increases three years after the intervention.
• This is the first study to our knowledge that shows long-term maintenance of increases in physical activity among mid-life African American women.
• This study was limited by reliance on self-report measures of physical activity. Future studies should verify these results using objective measures of physical activity.
• These results show the advantages of using group-based interventions in promoting lifestyle physical activity.
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National Institutes of Health

National Institute of Nursing Research (R01 NR04234)
## METHODS: Design

### Sites & order of delivering condition

<table>
<thead>
<tr>
<th>Wave</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Group visit</td>
<td>Group visit</td>
<td>Group visit + PC</td>
<td>Group visit + PC</td>
<td>Group visit + AC</td>
<td>Group visit + AC</td>
</tr>
<tr>
<td>2</td>
<td>Group visit + AC</td>
<td>Group visit + PC</td>
<td>Group visit + AC</td>
<td>Group visit</td>
<td>Group visit</td>
<td>Group visit + PC</td>
</tr>
<tr>
<td>3</td>
<td>Group visit + PC</td>
<td>Group visit + AC</td>
<td>Group visit</td>
<td>Group visit + AC</td>
<td>Group visit + PC</td>
<td>Group visit</td>
</tr>
</tbody>
</table>