Comprehensive Evaluation of a Multilevel Physical Activity Intervention in Older Adults


NHLBI R01HL98425
Ecological intervention
Process evaluation

• Helps you plan for dissemination
• Process evaluations can inform you about
  – Fidelity of intervention delivered
  – What processes are important requisites for behavior change?
  – Are there intervention components that are more effective?
  – For whom does the intervention work and why?
• Evaluation is more challenging for interventions that change individuals and the community
• Excellent examples of process evaluation for community projects in the ALbD supplement in AJPM (Nov 2012)
  – And KEYNOTE by Laura Brennan
Three retirement communities

**APARS**
- 5 indoor PA facilities
- 2 outdoor PA facilities
- 408ft walking path

**5 indoor PA facilities**
- 1 outdoor PA facility
- 237ft walking path

**5 indoor PA facilities**
- 10 outdoor PA facilities
- 10,560ft walking path
Individual level: pedometers

- Steps logged
- % meeting goal

3000 step count increase
Environment
Campus

% meeting 3000 step increase

- 10 fac, 10,000ft: 71%
- 2 fac, 400ft: 50%
- 1 fac, 200ft: 41%
Individual level: phone counseling & materials

4 calls to set goals, brainstorm barriers, increase self efficacy etc.

Internal QC

- Checklists
- Recordings
- Case management Process
- % complete calls
- Satisfaction
- Change in confidence
- Testimonials
% calls complete  | % meeting step goal

90% | 71%
50% | 41%

- Satisfaction with Phone Counseling = 39/45
- Satisfaction with Materials = 24/30
- 6 month change in Confidence = 36.0-36.6/40
Interpersonal level: group education & peers

Bi weekly education sessions for 6 months: knowledge, social support, skill building

Peer led sessions from months 3-12: social norms, role modeling, social cohesion

Internal QC
• Checklists
• Each session evaluated

Process
• % attendance: 80% (ed)
• Satisfaction: 27/30
• Group cohesion: 27/35
• Change in social support: 19.4-17.7/40
% meeting step goal

Neighborhood

Urban, mixed
76%

Urban, retail
74%

Suburban
48%

Peer Event
Attendance

71%

50%

41%
The most satisfied did not have the most attendance – can we rely on satisfaction measures?
Community level: maps, awareness & advocacy

Maps & awareness
- Satisfaction with materials & facilities
- Change in locations walked from survey & GPS
  - Walked mapped routes 4 days/wk

Community advocacy
- Project tracking
  - Issues Identified, Actions taken, Dates, Resolution, Notes (difficulty level, perceived impact etc.), Supporting Documents (pictures, letters, etc.), Promotion (announcement at resident council, newsletter, etc.), Engaged City Officials
- Pre-post pictures see handout

http://www.walksandiego.org/
Projects included improvements within the retirement community or the surrounding neighborhood.

Worked with the pedestrian advocacy organization, WalkSanDiego.

Successes at sites have included:
- Cleaner Pedestrian Bridges
- Safer Crosswalks
- Unobstructed Sidewalks
GPS assessed change in walking due to mapped routes
GPS change in walking due to increased crossing time

Safe cross walk project
6 month change in Satisfaction with facilities/50

- Campus
- 10 fac 10,000ft
- 2 fac 400ft
- 1 fac 200ft

% meeting step goal

- 2.2
- 0.4
- -0.3

- 71%
- 50%
- 41%
Baseline mins/wk
Active - ACC

Neighborhood

Urban, mixed

Urban, retail

Suburban

% meeting step goal

71%

50%

41%

41.6

36.9

32.0
What we’ve learned

- A large suburban campus did not support more people meeting a 3000 step goal
- Was peer event attendance related to step outcome?
- Was a large suburban campus a barrier to social walking?
- What role did social support, confidence, & satisfaction play?
- Larger changes in activity locations were associated with more people meeting step goals
- Did baseline potential for change most impact the uptake of the intervention
Conclusions

• Process data in an RCT perhaps have less variability than a community implementation
  – Intervention fidelity high
  – Individuals recruited similar: social & confident
  – Satisfaction high
• Should you rely on satisfaction or attendance?
• With more variability can use approaches like configurational frequency analyses
• Individual & interpersonal level process measures more developed than environment level
  – changes in activity locations can be measured and might be important
• Multilevel interventions should be taken as a whole package
• Important to consider context in intervention success
• Any questions?
• Jkerr@ucsd.edu
• MIPARC methods described in Contemporary Clinical Trials

• Evaluation may make you Smarter
• It may not make you any Happier
• Example surveys follow
Satisfaction with Phone Counseling

Please indicate how much you **disagree or agree** with the following statements about the phone counseling you received.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree or disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I understood the information given on the phone calls</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>b. I am happy with the length of the phone calls</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c. I enjoyed the phone calls</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>d. I am happy with how often the phone calls occurred</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e. The phone counselor was organized</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f. The step goals were challenging</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>g. I felt the phone counselor listened to me</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>h. The phone calls helped me plan more walking into my day</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>i. The phone counselor was able to answer my questions</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<td>☐</td>
</tr>
</tbody>
</table>
## Self-Efficacy survey questions

1. **How confident** are you that you can …

<table>
<thead>
<tr>
<th></th>
<th>Not at all confident</th>
<th>Somewhat confident</th>
<th>Absolutely confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. walk for 5 minutes without stopping</td>
<td>☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5</td>
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<td>b. walk for 15 minutes without stopping</td>
<td>☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5</td>
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<tr>
<td>c. walk for 20 minutes without stopping</td>
<td>☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5</td>
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<tr>
<td>d. use the inside hallways on your campus to increase your walking</td>
<td>☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5</td>
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<td>e. use the stairs instead of the elevator</td>
<td>☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5</td>
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<td>f. participate in an exercise class</td>
<td>☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5</td>
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<tr>
<td>g. go on off-campus bus trips that involve walking (e.g., shopping, museums, etc.)</td>
<td>☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5</td>
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<tr>
<td>h. use outdoor walking paths on your campus to increase your walking</td>
<td>☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5</td>
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<tr>
<td>i. use the exercise room or equipment</td>
<td>☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5</td>
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<tr>
<td>j. walk in the surrounding neighborhood</td>
<td>☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5</td>
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</tbody>
</table>
# Materials satisfaction survey questions

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree or disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
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</thead>
<tbody>
<tr>
<td>a. The information in my binder helps me walk more</td>
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<tr>
<td>b. The prizes given out during sessions and events motivate me</td>
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<tr>
<td>c. The celebration board motivates me</td>
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<td>d. The step log helps keep me on track</td>
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<tr>
<td>e. The progress charts motivate me to reach my goal</td>
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<tr>
<td>f. The pedometer helps me walk more</td>
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</tbody>
</table>
• Activity location survey

In a **typical week** how many days do you…

<table>
<thead>
<tr>
<th>Activity Description</th>
<th>0 days</th>
<th>1 day</th>
<th>2 days</th>
<th>3 days</th>
<th>4 days</th>
<th>5 days</th>
<th>6 days</th>
<th>7 days</th>
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</thead>
<tbody>
<tr>
<td>Walk indoors for more than 10 minutes on your campus (e.g., in hallways, rooms,</td>
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<tr>
<td>stairways)?</td>
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<tr>
<td>Use the indoor exercise room or exercise equipment on your campus?</td>
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<tr>
<td>Take part in an exercise class on your campus?</td>
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<tr>
<td>Attend active programs on your campus (e.g., Wii games, dances, walking group, etc.)</td>
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<tr>
<td>Walk outdoors for more than 10 minutes on your campus?</td>
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<td>Use the outdoor exercise/activity courts on your campus?</td>
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<td>Walk off-campus (i.e., into the neighborhood outside of the boundary to your campus)</td>
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<tr>
<td>Attend exercise classes <strong>off-campus</strong>?</td>
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<td>Attend off-campus outings (e.g., trips, drives) that allow you to walk?</td>
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</tbody>
</table>
### Satisfaction with facilities survey

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly dissatisfied</th>
<th>Somewhat dissatisfied</th>
<th>Neither satisfied or dissatisfied</th>
<th>Somewhat satisfied</th>
<th>Strongly satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>the indoor hallways as places to walk on your campus?</td>
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<td></td>
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<td></td>
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<tr>
<td>the accessibility of staircases on your campus?</td>
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<td></td>
<td></td>
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<tr>
<td>the exercise room/equipment on your campus?</td>
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<td></td>
</tr>
<tr>
<td>the exercise classes offered on your campus?</td>
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<td></td>
</tr>
<tr>
<td>the active programs (e.g., dances, walking groups, etc.) offered on your campus?</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the outdoor walking paths on your campus?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the outdoor courts and equipment on your campus?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the availability of safe walking routes <strong>off-campus</strong>?</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>the availability of exercise classes for seniors <strong>off-campus</strong>?</td>
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</tr>
<tr>
<td>organized outings (trips, drives) that involve some walking?</td>
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</tr>
</tbody>
</table>
Please indicate how much you **disagree or agree** with the following statements about the **peer events**.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree or disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I understand the purpose of the peer events</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>a. The information presented at the peer events is clear</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>a. I am happy with the length of the peer events</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>a. I enjoy the peer events</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>a. I am happy with how often the peer events occur</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>a. The peer events are well organized</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>