FitSteps for Life: Improving Quality of Life for Persons with Cancer through a Community-based Exercise Program

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10/30/11
Background & Significance

- 12 million cancer survivors U.S.
- Substantial physical and psychological benefits of exercise
- Majority of studies short duration, tightly controlled
Background & Significance

- ACSM Guidelines (ASCO 2010)
- Reimbursement an issue
- Cost of cancer care
- Exercise considerations for persons with cancer preclude general exercise facilities
Purpose

To determine the effects of a community-based program of exercise on the quality of life (QOL) of persons with cancer over time.
Theoretical Framework

- Bandura’s Social Cognitive Theory
- Triadic reciprocation among person, behavior, and environment
- Self-efficacy develops from the interaction of the components
- Collective self-efficacy
Social Cognitive Theory

Personal Factors
Demographics

Behavior
Exercise

Environment
CFFL / FSFL

Bandura (1986)
Design

Repeated measures
pre-test/ posttest design
Sample/Setting

- Convenience sample
- All cancer types
- Any stage
- Physician referred
- Liability waiver
- East Texas/ Dallas
  - 14 community locations
Intervention

- Individualized
- Monitored
- Treadmill walking
- Upper / lower body stretching and strengthening
- Core muscle strengthening
Measurements

- Demographic data
- SF-36 Medical Outcomes Survey
- Accrual May 2006 through April 2009
- Every 3 months first year; every 6 months year 2
Participants (n = 1665)

\[ n = 701 \text{ active; 964 “inactive”} \]

- No significant differences:
  - Gender
  - Race
  - Education
Participant Differences
Active versus Inactive

- Demographics
  - Age
  - Financial
  - Employment
  - Household

- Co-morbid conditions
  - Obesity
  - Diabetes

- Cancer treatment
  - Chemotherapy
Results: Demographic

- Mean age = 65.44 (range 27-90)
- Female (72%)
- Caucasian (80%); African-American (13%); Hispanic (4%)
- Live with adult (71%)
- Educated (96% high school or higher)
- Financially stable (85%)
- Not working (74%)
# Results: Demographic

<table>
<thead>
<tr>
<th>Disease</th>
<th>Stage</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Breast</td>
<td>I</td>
<td>(20%)</td>
</tr>
<tr>
<td>Lung</td>
<td>II</td>
<td>(20%)</td>
</tr>
<tr>
<td>Prostate</td>
<td>III</td>
<td>(13%)</td>
</tr>
<tr>
<td>Colorectal</td>
<td>IV</td>
<td>(9%)</td>
</tr>
<tr>
<td>Lymphoma</td>
<td>Unknown</td>
<td>(38%)</td>
</tr>
<tr>
<td>Other</td>
<td>Unknown</td>
<td>(38%)</td>
</tr>
</tbody>
</table>

- Breast: 50% (Stage I: 20%)
- Lung: 6% (Stage II: 20%)
- Prostate: 9% (Stage III: 13%)
- Colorectal: 9% (Stage IV: 9%)
- Lymphoma: 7% (Unknown: 38%)
- Other: 19% (Unknown: 38%)
Results: Demographic

- Co-morbidities (70%):
  - Heart disease (10%)
  - Lung disease (5%)
  - HTN (42%)
  - Diabetes (13%)
  - Arthritis (34%)
  - Obesity (20%)

- Require assistive device for mobility (10%)

- In treatment (40%)
### SF-36 Significant Correlations

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<tr>
<th></th>
<th>PF</th>
<th>SF</th>
<th>BP</th>
<th>RE</th>
<th>RP</th>
<th>GH</th>
<th>VT</th>
<th>MH</th>
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<tbody>
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<td></td>
<td></td>
<td></td>
<td>.086*</td>
<td>.151**</td>
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<td>-.128**</td>
<td>-.130**</td>
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<td>-.224**</td>
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<td>-.180**</td>
<td>.081*</td>
<td>-.094*</td>
<td>-.108**</td>
<td>-.093*</td>
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<tr>
<td>Obese</td>
<td>-.184**</td>
<td>-.087*</td>
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<td></td>
<td>-.159**</td>
<td>-.110**</td>
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<tr>
<td>Assist Walk</td>
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<td>-.178**</td>
<td>-.199**</td>
<td>-.261**</td>
<td>-.169**</td>
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<td>Chemo</td>
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<td>-.111**</td>
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<td>-.139**</td>
<td>-.123**</td>
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* p<.05; ** p<.01
## ANOVA Multiple Responses

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>Significance</th>
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<tbody>
<tr>
<td>Physical Functioning</td>
<td>7.31</td>
<td>&lt;.001*</td>
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<tr>
<td>Role Performance</td>
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<td>Bodily Pain</td>
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<td>General Health</td>
<td>6.61</td>
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<tr>
<td>Vitality</td>
<td>15.88</td>
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<td>Social Functioning</td>
<td>14.32</td>
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<tr>
<td>Role Emotional</td>
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<tr>
<td>Mental Health</td>
<td>9.59</td>
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</table>
Physical Functioning
(n=701, 601, 420, 318, 298, 223, 177)
Role Physical
(n=701, 601, 420, 318, 298, 223, 177)
Bodily Pain
(n=701, 601, 420, 318, 298, 223, 177)
General Health
(n=701, 601, 420, 318, 298, 223, 177)
Vitality
(n=701, 601, 420, 318, 298, 223, 177)
Social Functioning
(n=701, 601, 420, 318, 298, 223, 177)
Role Emotional
(n=701, 601, 420, 318, 298, 223, 177)
Mental Health
(n=701, 601, 420, 318, 298, 223, 177)
Case Study Example

DB and Susan
Limitations

- Different types of cancer
- Varying points along disease trajectory
- Differing treatments
- Co-morbidities
- Attrition
  - Complications
  - Death
  - Distance
Discussion

- Supports previous research
- Expands exercise paradigm
- Suggests effectiveness of targeted program, social support
Next steps

- **Program:**
  - Expansion of mission through FitSTEPS®
  - Other chronic conditions

- **Research:**
  - Case study
  - 2-yr follow-up with SF-8
  - Navigator pilot
  - Social support/ self-efficacy
What questions do you have?