Best Practice PA Programs: Findings from the National Impact Study

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Impact Study Partners

- Robert Wood Johnson Foundation
- National Council on Aging
- University of Illinois, Chicago and other members of:
- Healthy Aging Network of the Prevention Research Centers
- The National Blueprint on Physical Activity
- CDC – Aging and Physical Activity
- Administration on Aging
- Active for Life Initiative

Best Practice Study: National Competition, Spring 2003

- Public or not-for-profit organizations
- 300+ participants annually
- Track attendance
- Offer multiple types of activities
- Available multiple times each week and throughout most of the year
- Offered programming for several years

Best Practice Selection Criteria

- Selection criteria
  - Why does your organization believe that your physical activity programming has a positive impact on the health or quality of life of people age 60+?
  - Why does your organization believe that this is sustainable, replicable programming?

10 Winners of Best Practice Competition

Study Design and Methods

Impact Study Objective

- Impact Study addressed the following question:
  - *Do best practice physical activity programs provided by community-based organizations measurably impact the health and well-being of participants?*

Criteria for Selection of Impact Study Sites

- Heterogeneity
  - Population served
  - Organization type
  - Geographic location
- Strong Multiple Component Program
  - Flexibility
  - Aerobic conditioning
  - Strength training
- Capacity to recruit 250 new participants, and to enroll 125 in best practice programming!
- *Interest in participation!!*

Impact Study Sites

Holy Cross Hospital, Silver Springs, MD

- Senior Fit housed in Community Health Department and supported by community benefit fund of Kaiser Permanente.

Madison School and Community Recreation, Madison, WI

- Goodman-Rotary 50+ Exercise Program funded through an endowment supervised by Madison Rotary Club.

Resources for Seniors,Raleigh, NC

- RFS provides home and community-based services in Wake Co., NC. and wide array of physical activity programming at 5 senior centers.

Methods

- Multi-site Randomized Trial with 3 Best Practice Sites
- Recruitment Target: 250 volunteers at each site (125 treatment, 125 control)
- Controls could take other classes at sites or elsewhere
- *New* vs. prior participants
- Face-to-face interviews at baseline, 5, and 10 months
- Attendance collected at all Best Practice Classes
- Daily exercise logs completed by *all* participants tracked what people were doing

Mediators

- Self-efficacy
  - SE for exercise
  - SE for barriers adherence
  - SE for time adherence
- Outcome expectations for exercise

Outcomes

- Performance measures (Rikli and Jones, 2001)
  - Aerobic conditioning (6-minute distance walk)
  - Upper body strength (arm curl)
  - Lower body strength (timed sit-stand test)
  - Upper body flexibility (back scratch test)
- Exercise maintenance (CHAMPS)
- Functional status (SF-36)
- Health-related quality of life (SF-36)
- Depression (CES-D)

Screening and Enrollment

Total Calls		**995**	**% of Total Calls**
Eligible/Enrolled		**544**	**54.67%**
Refused Participation after initial phone screen		**153**	**15.38%**
Ineligible		**66**	**6.63%**
Refused		**190**	**19.10%**
Unresolved		**42**	**4.22%**

Common Reasons for Refusal to Participate

- Time and/or day of exercise class offering: 25%
  - Working; unable to attend daytime sessions
  - Conflicting caregiving responsibilities
- Not interested in participating: 23%
- Time commitment required for participation: 8%
  - Extended travel plans
  - Other obligations and commitments
- Distance from the exercise location: 6%

Baseline Demographics of Study Participants

	Treatment N=289 Mean or %	Control N=255 Mean or %
Age	66 (51-88)	66 (50-87)
Female	77	78
Education		
>=12 grade	13	15
Some college	24	27
College grad +	64	58
Race		
Caucasian	86	81
Income		
>= $50,000 per year	45.7	48.6

** No significant differences between Treatment and Control Groups.

Disease Characteristics of Study Participants

	Treatment	Control
	N=289	N=255
BMI		
Underweight	1.7	0.8
Normal	27.7	25.1
Overweight	33.2	38.0
Obese	37.4	36.1
Chronic Conditions		
Arthritis	53.0	54.5
Hypertension	39.6	33.9
Diabetes	14.2	11.1
Heart Disease	11.4	8.3

70.6%

74.1%

** No significant differences between Treatment and Control Groups.

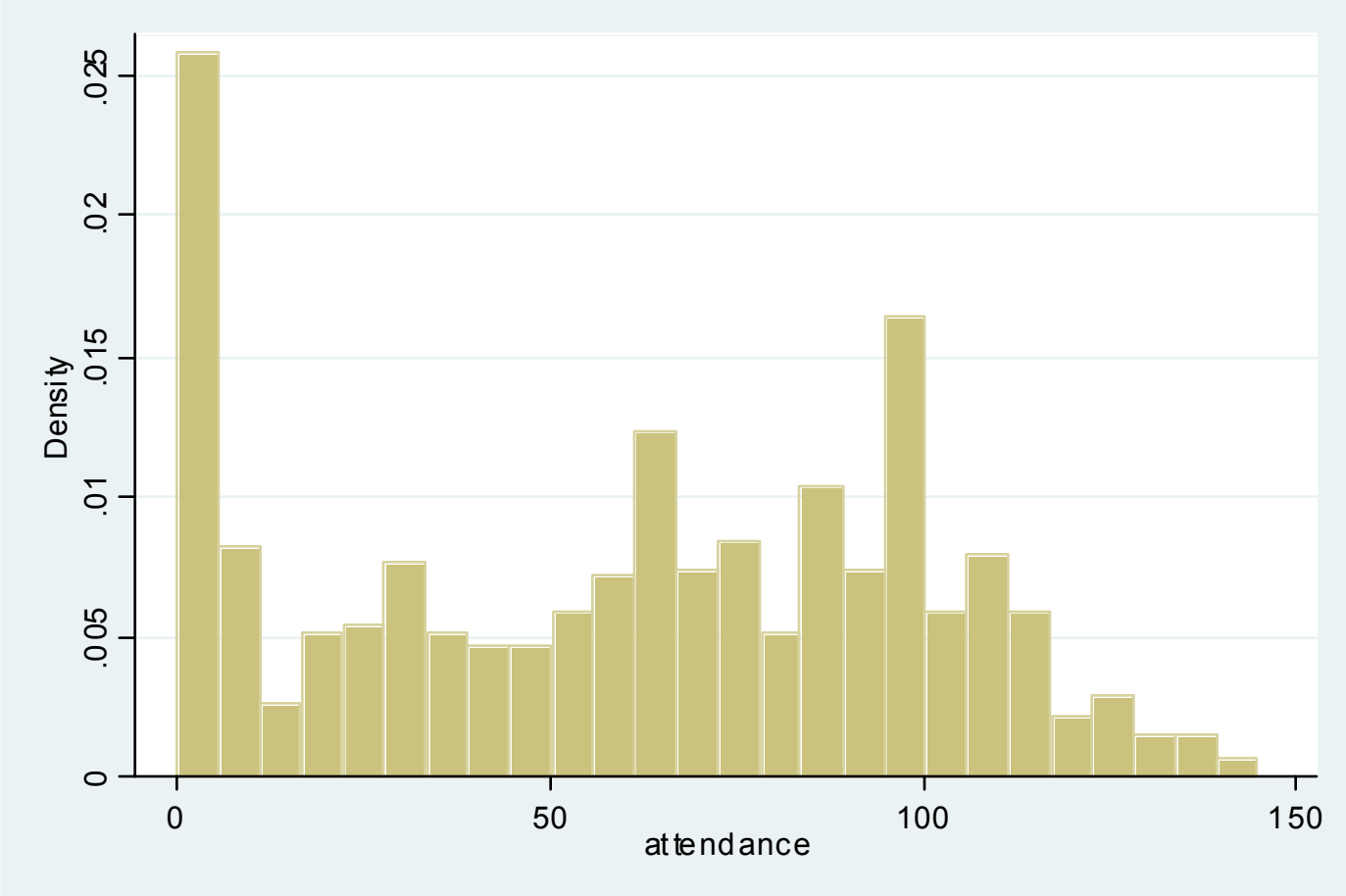
Monitoring Attendance and Participation

- Attendance information at Impact Study classes collected weekly
- Enrollment and participation also tracked in non-Impact Study classes
- All participants completed and submitted daily exercise logs to track participation in physical activity

Attendance

- Mean across all three sites: 53.6 (s.d. 40.8) classes
- Range: 0-145 classes
- Median: 56 classes
- Approximate maximum possible = 120

Attendance



Outcomes and Findings

Analyses

- Intent to Treat, conservative approach includes all persons assigned to both groups regardless of what they actually used
- Used a Random Effects Model:
  - Assumes missing data are unrelated to true value of (unobserved) outcome variable, conditional on covariates

Mediators across Sites: Treatment vs. Control

Mediator	Baseline Score & Range	5 Months N=374	10 Months N=384
Self-Efficacy for Exercise	9 (1-10)	0.140	**0.049**
Outcome Expectations for Exercise	1.5 (1-5)	0.922	0.701
Self-Efficacy for Barriers Adherence	75 (1-100)	**0.000**	**0.022**
Self-Efficacy for Time Adherence	88 (1-100)	**0.000**	**0.001**

Outcomes across Sites: Treatment vs. Control

Outcome	Baseline Score & Range	5 Months N=374	10 Months N=384
Timed Sit-Stand Test (lower extremity strength)	25 (0-77)	**0.003**	**0.005**
Arm Curl (upper body strength)	15 (5-35)	**0.025**	**0.006**
Back scratch test (upper body flexibility)	-5 (-25 to +5)	0.158	0.210
6-Minute Distance Walk	1404 (0-2592)	0.383	0.603
Body Mass Index	29 (14-52)	0.853	0.146
CES-D	7 (0-44)	0.747	0.131

Outcomes across Sites: Treatment vs. Control

Outcome	Baseline Score & Range	5 Months N=374	10 Months N=384
Caloric Expenditure for All Exercise	3965 (0-27,891)	0.381	0.539
Caloric Expenditure for Moderate Exercise	2318 (0-20,898)	0.591	0.756
Frequency of participation in all exercise activities	18 (0-78)	**0.019**	**0.028**
Frequency of participation in moderate intensity exercise activities	7 (0-44)	0.104	0.141

Effect Sizes: Mediators

	5 months	10 months
Self-Efficacy for Exercise	0.121	0.123
Outcome Expectations	0.021	0.058
Barriers Adherence	**0.395**	**0.195**
Time Adherence	**0.592**	**0.267**

Effect Sizes: Outcomes

	5 months	10 months
CES-D Scale	0.090	0.210
Body Mass Index	-0.033	-0.037
6-minute walk	0.166	0.161
Timed sit-stand	**0.245**	**0.341**
Arm Curl Test	**0.256**	**0.278**
Back Scratch Test	-0.090	0.111

Effect Sizes: CHAMPS

	5 months	10 months
Caloric Expenditure All	0.154	0.041
Caloric Expenditure Moderate	0.093	0.039
Frequency of Physical Activity: All activities	**0.314**	**0.211**
Frequency of Physical Activity: Moderate intensity activities	**0.245**	0.136

Sustainability

- 15 classes were added across 3 sites to facilitate impact study.

- All 15 classes maintained at conclusion of study, demonstrates to sites that significant demand exists for these programs that can be met through creative partnerships/networking.

Conclusions

- Higher rates of attendance among early enrollees than among later enrollees.
- Successful retention strategies need to be developed to help participants achieve and maintain benefits of exercise.
- Significant improvements at five months that were maintained at 10 months among treatment group participants.

Implications

- First randomized trial to our knowledge of PA programs provided in community; produced very good news-
- Organizations in the community that try to provide the best, most up to date programming tested to date, despite variability in attendance, show impact on 6 important outcomes:
  - Self-efficacy for exercise
  - Self-efficacy for adherence over time
  - Self-efficacy for adherence in the face of barriers
  - Upper extremity strength
  - Lower extremity strength
  - Increased participation in physical activity (26% increase from baseline in treatment group)

Implications, cont'd.

- Enhanced self efficacy, in theory, necessary in order to maintain health behavior over time
- Decreased muscle strength (especially in lower extremities) shown to be risk factor for disability and institutionalization (Jette, Branch and Berlin, 1990; Guralnik et al., 1995; Dunlop, Hughes et al., 1998).
- Increased participation in PA that is maintained over time can reduce incidence of/help manage other chronic diseases and reduce mortality risk.