HHS Public Access

Author manuscript

J Phys Act Health. Author manuscript; available in PMC 2016 March 06.

Published in final edited form as:

J Phys Act Health. 2015 June ; 12(6 Suppl 1): S26–S30. doi:10.1123/jpah.2014-0149.

Characteristics of Walking Group Leaders as Compared to Walking Group Members in a Community-Based Study

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Abstract

BACKGROUND—Walking interventions delivered by lay leaders have been shown to be effective. Knowing the characteristics of individuals who volunteer to be group leaders in walking programs could facilitate more efficient and effective recruitment and training.

METHODS—Walking group leaders were recruited into a community-based program and formed walking groups from existing social networks. Leaders and members completed a survey, participated in physical measurements, and wore an accelerometer. Regression models (adjusting for group clustering and covariates) tested psychosocial and behavioral differences between leaders and members.

RESULTS—The sample included 296 adults (86% women, 66% African American). Leaders (n=60) were similar to members (n=236) with respect to most sociodemographic and health characteristics, but were significantly older and more likely to report arthritis and high cholesterol (p values < .05). Although leaders and members were similar in sedentary behavior and physical activity, leaders reported higher levels of exercise self-regulation, self-efficacy, and social support (p values < .01). Leaders also reported greater use of outdoor trails (p=.005) and other outdoor recreation areas (p=.003) for physical activity than members.

CONCLUSION—Although walking group leaders were no more active than members, leaders did display psychosocial characteristics and behaviors consistent with a greater readiness for change.

Introduction

Walking is a common and preferred form of physical activity[1] as it does not require special equipment or a gym membership, leads to substantial health benefits,[2] and is generally safe

for underactive adults to initiate. Thus, ways to effectively promote walking have the potential to improve the health of underactive adults.[3] A recent meta-analysis found that interventions to promote walking in groups significantly increased physical activity, and the degree of change corresponded to a medium effect size (d=0.52).[4] It was notable that studies of lay leaders who had at least basic training to become walk leaders yielded similar increases in physical activity as studies of professionally delivered interventions. Similarly, a recent systematic review concluded that peer-delivered physical activity interventions were as effective as professionally-delivered interventions,[5] and the authors called for more research to better understand factors that can explain and maximize their effectiveness.

Many of the group walking interventions tested to date required that members walked together, created groups that were somewhat artificial (i.e., research participants were placed into groups rather than recruiting self-determined groups), and were comprised of predominantly white middle aged women.[4] Requiring group members to walk together may not be convenient or desirable for many, particularly when the group members do not live or work close to one another. Further, forming groups from one's own social network may lead to greater group cohesion and may allow for more flexible approaches such as providing group support through telephone, email, and other forms of contact for walking on ones' own.

Little is known regarding the characteristics of individuals who volunteer to be walking leaders from naturally occurring networks. Having a better understanding of these characteristics could help to guide both leader recruitment and training. Recruitment messages could be better tailored to more efficiently reach leaders and to resonate with potential leaders if psychosocial and behavioral characteristics were known. With regard to training, ideally leaders would have more confidence in their ability to change and might even have begun to make behavioral changes so as to better motivate group members. However, if leaders lack these characteristics, training protocols would likely need to be adapted.

The purpose of this study was to better understand the characteristics of people who volunteer to be group leaders and form groups from their existing social networks in a community-based walking program. We compared the sociodemographic and health characteristics of group leaders and group members and described the nature of their relationships. We also tested for psychosocial and behavioral differences, and hypothesized that group leaders would have more favorable psychosocial characteristics and behaviors regarding physical activity than group members.

Methods

Procedures and Participants

Sumter County On The Move! (SCOTM!) is a community-based program that uses strategies for mobilizing, supporting, and reinforcing existing social networks to increase walking. The study was approved by the university Institutional Review Board. Individuals who lived or worked in Sumter County, SC were recruited to become walking group leaders via newspaper, television, and radio advertisements, public service announcements, and

stories; community flyers; worksite listservs and newsletters; website notices; community presentations; direct mailings to county residents; and word of mouth. Leaders were requested to form groups, ideally of 4 to 8 members, from their existing social networks. Groups were not required to walk together (although at least occasional group walks were encouraged), and group leaders were encouraged to provide support to their members for walking in general through methods including telephone contacts. The rationale for not requiring groups to walk together was that support can be provided in many ways beyond just walking together, and coordinating multiple schedules might pose logistical barriers for regular walking.

Walking group leaders and members were screened first by telephone to ensure they met the following self-reported inclusion criteria: (a) 18 years of age or older, (b) resident of or employed in Sumter County, SC, and (c) had at least one other person in their group, preferably more. Self-reported exclusion criteria were: (a) no contraindications for physical activity, as determined by the Physical Activity Readiness Questionnaire [6] (those taking blood pressure medications were allowed to participate if their blood pressure was controlled), (b) not taking insulin, (c) could walk longer than three minutes without resting, (d) could stand without assistance for more than two minutes, and (e) could sit in a chair without arms for more than five minutes.

At baseline, after informed consent was obtained (consent form approved by the university Institutional Review Board), leaders and members participated in an in-person measurement session. All measures, unless otherwise noted, were collected via a self-administered questionnaire. Participants received a pedometer, t-shirt, and walk manual at the end of the baseline measurement session. Measurements were repeated at the end of the program (6 months) and 6 months later (12 months). This paper uses data from the baseline measurement, before the intervention began.

Measures

Sociodemographic characteristics—Participants reported their age, gender, race, and years of education.

Health-related characteristics—Participants rated their health (excellent to poor) and whether a health care professional had ever said that they had hypertension (including during pregnancy), high cholesterol, arthritis, diabetes (including during pregnancy(, or osteoporosis.[7] Height and weight were measured by trained staff and body mass index (BMI) was computed as kg/m^2.

Relationships and Interactions with Walking Group Leaders—Group members were asked to rate how close they were to their walking group leader (not very close, somewhat close, very close); the nature of their relationship (casual acquaintance, friend, family member, co-worker); whether their group leader lives in their neighborhood (yes or no); and the frequency of contact with their group leader (rarely, at least once a month, 2-3 times per month, at least once a week).

Psychosocial variables—Self-regulation was measured with the Exercise Goal-Setting Scale (10 items) and the Exercise Planning and Scheduling Scale (3 of original 10 items).[8] Participants rated each item on a 5-point scale ranging from 1 (does not describe me) to 5 (describes me completely). The average across items was computed for each scale (higher scores = greater exercise self-regulation). This scale has high internal consistency (α = .89, α = .87), test-retest reliability (r = .87, r = .89), and correlations with energy expenditure (r = .38, r = .42).[8]

Self-efficacy for overcoming common barriers to exercise was assessed with Marcus et al's 5-item scale.[9] Participants rated their confidence to exercise in the face of barriers on a scale from 1 (not at all confident) to 10 (very confident). The average across items was computed (higher scores = greater exercise self-efficacy). This scale has high internal consistency (α = .82) and is positively and significantly associated with physical activity and stages of change.[9, 10]

Social support for exercise from family and friends was assessed with Sallis and colleagues' scale.[11] One item, "Took over chores so I had more time to exercise," was added based on the relevance of this issue in our previous experiences with similar populations. Participants rated how often 14 different types of support were provided ranging from 1 (none) to 5 (very often), separately for family and for friends. "Does not apply" was an option, and these responses were converted to a score of 1, consistent with standard scoring (http://sallis.ucsd.edu/measures.html). The average of all items was computed (higher scores = greater social support). This scale has acceptable test-retest reliabilities (r = .55 to .86), internal consistencies (α = .61 to .91), and is associated with exercise behavior.[11]

Physical activity and related behaviors—Participants wore an ActiGraph accelerometer (GT1M model, ActiGraph, LLC, Fort Walton Beach, FL) on their right hip for all waking hours, except when sleeping or immersed in water, for seven consecutive days. A 60-second epoch (time interval) was used. Only days with at least 10 hours wear were used, and to be included in analyses, participants had to wear the monitor for a minimum of 4 days, including at least 1 Saturday.[12] Data from Sundays were not used due to low rates of protocol compliance. Instances of consecutive zeroes for 60+ minutes were removed from analysis due to presumed non-wear time. Counts/minute of ≥1952 were considered moderate- to vigorous-intensity physical activity,[13] whereas counts/minute of ≤100 were considered sedentary behavior.[14]

Using two items from our previous work in Sumter County,[15] participants reported how many days in a typical month they used (a) an outdoor area with a trail for physical activity, and (b) some other outdoor area for physical activity.

Statistical Analyses

All analyses were conducted with SAS version 9.3 (Cary, NC). For sociodemographic variables, leaders and members were compared using a t-test for age and chi-square analyses for categorical variables. For the psychosocial characteristics and behavioral variables of interest, regression models tested whether there were differences in these variables (dependent variables) according to whether the participant was a leader or member

(independent variable). All models controlled for race, age, gender, education, self-rated health, and BMI. Models using accelerometer data also controlled for wear time. SAS PROC MIXED was used to control for the potential clustering effect of group in all regression models.

Results

Sample Characteristics

The sample included 296 adults (86% women, 66% African American, 45% college or technical school graduate) who averaged 49.35 ± 13.35 years of age. There were 60 walking group leaders and 236 walking group members.

Sociodemographic and Health-Related Characteristics

Group leaders did not differ significantly from members on gender, race, or education (see Table 1). Leaders, however, were significantly older than members ($p = .04$). Leaders were similar to members on self-rated health, weight status, and the presence of hypertension, diabetes, and osteoporosis. Leaders, however, were significantly more likely to report having been told by a health care provider that they have high cholesterol ($p = .02$) and arthritis ($p < .01$).

Relationships and Interactions with Walking Group Leaders—The majority of members indicated that they were somewhat (43.3%) or very close (43.3%) to their group leader. Only 13.4% reported that they were not very close to their group leader. The most common relationship they had with their group leader was as a friend (34.5%) or co-worker (31.4%), followed by family member (22.6%) and casual acquaintance (11.5%). Most group members lived in a different neighborhood than their group leader (79.7%). The majority of group members reported at least weekly (73.6%) contact with their group leaders (6.1% rarely, 8.7% at least once a month, 11.7% 2-3 times per month).

Psychosocial Characteristics and Behaviors

As shown in Table 2, after adjustment for group clustering and covariates, leaders had significantly higher scores than members on exercise self-regulation for setting goals, exercise self-efficacy, and exercise social support. The groups did not differ on exercise self-regulation for planning and scheduling. Leaders wore their accelerometers significantly more minutes per week than members (6100.0 vs. 5523.9 minutes, $p = .02$). After adjustment for group clustering, covariates, and accelerometer wear time, leaders and members spent comparable amounts of time in sedentary and moderate- to vigorous-intensity physical activity. After adjustment for group clustering and covariates, walking group leaders reported significantly greater use of outdoor areas with trails as well as other outdoor areas for physical activity.

Discussion

This study examined the characteristics of individuals who volunteer to form and lead walking groups within their existing social networks, and how these leaders differ from the

members they recruit. Members were most likely to be a friend or co-worker to the leader, to live in a different neighborhood, and to have regular (at least weekly) contact. Contrary to hypotheses, walking group leaders were no more active than members, suggesting that perhaps they were motivated to join the study to increase their own physical activity. However, leaders displayed psychosocial characteristics and behaviors that are consistent with being more ready for change. That is, leaders had higher levels of exercise self-regulation for goal setting, they were more confident they could overcome common barriers to exercise, and they reported receiving more social support to be physically active from their family and friends. In terms of behaviors, they also reported greater use of trails and other outdoor recreation areas for physical activity. Thus, leaders were both similar to members but were more advanced with respect to some of the cognitive and behavioral strategies that have been shown to be important for behavior change. Therefore, these leaders have the potential to be good social role models as members can likely relate to them due to some shared characteristics, yet presumably the leaders may make change somewhat more quickly than the members and thus could be motivational. The fact that these leaders exhibited characteristics consistent with those often sought for leaders in more formally controlled group-format walking interventions suggests that such interventions could be implemented within naturally occurring social networks.

Some of the strategies that were being used by the role models have been shown to be important for behavior change. A recent review concluded that interventions including self-monitoring plus one other self-regulatory technique, such as goal setting, were more effective in increasing physical activity than interventions without this combination.[16] Similarly, goal setting, enhancing self-efficacy, and promoting social support have all been identified as cognitive-behavioral strategies that have been shown to promote physical activity and dietary behavior change.[17] Self-efficacy is a construct common to most theories/models of behavior change, including social cognitive theory[18, 19] and the transtheoretical model,[20] and self-efficacy increases across stage progression in the transtheoretical model. Indeed, in post-hoc analyses conducted (data not shown), all of the psychosocial characteristics examined in this study were significantly related to objectively-measured baseline physical activity (full sample).

Walking group leaders did not differ as appreciably from members with regards to sociodemographic and health characteristics. Leaders were significantly older than members and had significantly higher rates of self-reported high cholesterol and arthritis. It is possible that these health conditions motivated the leaders to learn about health behaviors, take action and join the program for better disease self-management.

There are several limitations of this study, including the relatively small sample of walking group leaders (n=60), the cross-sectional design, and the focus on one county in one state which may limit generalizability. The study also has a number of strengths. A majority of study participants were African American, thus the sample represents a unique and understudied population [4]. We used an objective measure of physical activity. In addition, we were able to compare leaders to members across a range of variables, generally using well-validated and reliable measures.

Several recent reviews have underscored the potential that peer / lay health advisors play in promoting health and disease risk.[4, 5, 21, 22] Yet, studies have not examined the characteristics of walking group leaders and how they differ from walking group members. Results from our study could be useful for recruiting walking group leaders for research and community programs. The results could inform more salient and efficient recruitment strategies. For example, messages might acknowledge that the leaders need not be as physically active yet as they wish, but have the beliefs and motivation to take the next step for themselves and for their friends and coworkers (as these were the two most common relationships reported in our sample). The larger study will allow us to examine whether these characteristics, along with other leader characteristics, are associated with changes in physical activity in members.

Acknowledgments

We wish to thank the Sumter County On the Move! participants for taking part in the study. We thank the staff and students at the University of South Carolina and Sumter County Active Lifestyles for their time and hard work. We also thank Sumter County Recreation and Parks for their support and provision of facilities for the work to be carried out. This work was supported by the Centers for Disease Control and Prevention's National Center for Chronic Disease Prevention and Health Promotion by Cooperative Agreement Number U48-DP-001936. The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention or the Department of Health and Human Services.

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Table 1

A Comparison of Walking Group Leaders and Walking Group Members on Sociodemographic and Health Variables

Participant Characteristics	Leader n = 60	Member n = 236	p
Sociodemographic Characteristics			
Age, years (SD)	52.07 (10.51)	48.65 (13.92)	0.04
Gender, %			0.41
Male	10.00	15.25	
Female	90.00	84.75	
Race, %			0.44
White	35.00	29.66	
Non-White	65.00	70.34	
Education, %			0.19
College graduate	53.33	43.16	
Not college graduate	46.67	56.84	
Employed, %			0.63
Yes	75.00	71.37	
No	25.00	28.63	
Health-Related Characteristics			
Health rating, %			0.46
Excellent	15.00	12.39	
Very good	33.33	37.18	
Good	48.33	40.60	
Fair	3.33	8.55	
Poor	0.00	1.28	
Weight status, %			0.24
Normal	8.33	14.89	
Overweight	36.67	27.66	
Obese	55.00	57.45	
Health conditions (self-reported), %			
Hypertension	48.33	46.58	0.88
High cholesterol	45.00	28.63	0.02
Arthritis	43.33	22.65	<0.01
Diabetes	6.67	14.96	0.13
Osteoporosis	11.67	6.41	0.17

Note: P values for all except age resulted from a χ^2 test (categorical variable) or Fisher's Exact test (dichotomous variable). P value for age resulted from a t-test. One participant had a body mass index in the underweight category and is not included in the weight status category.

Table 2

A Comparison of Walking Group Leaders and Walking Group Members on Psychosocial Characteristics and Behaviors

Dependent Variables	Leader Mean (SE) n = 60	Member Mean (SE) n = 236	F (p) for difference
Psychosocial Characteristics			
Self-regulation: goals (range: 1-5)	2.58 (0.19)	2.10 (0.16)	12.11 (0.001)
Self-regulation: plans (range: 1-5)	3.63 (0.22)	3.48 (0.17)	0.91 (0.34)
Exercise self-efficacy (range: 1-7)	4.52 (0.28)	3.71 (0.22)	15.16 (0.0003)
Exercise social support (range: 1-5)	2.68 (0.12)	2.40 (0.10)	9.71 (0.003)
Behaviors			
MVPA, mins/day	22.28 (3.35)	21.39 (2.70)	0.13 (0.72)
MVPA, % of wear time	2.59 (0.38)	2.44 (0.31)	0.29 (0.59)
Sedentary behavior, mins/day	557.90 (22.15)	556.65 (18.01)	0.01 (0.94)
Sedentary behavior, % of wear time	65.40 (2.42)	65.18 (1.96)	0.02 (0.90)
Use of outdoor area with trail for PA, days/month	6.39 (1.16)	3.87 (0.92)	8.57 (0.005)
Use of other outdoor area for PA, days/month	5.91 (1.14)	3.30 (0.90)	9.69 (0.003)

Note: MVPA = moderate- to vigorous-intensity physical activity. PA = physical activity. Means and p values resulted from regression models that adjusted for group clustering as well as race, age, gender, education, self-rated health, and body mass index. The MVPA and sedentary behavior models also adjusted for accelerometer wear time.