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Real-World Evaluation of a Community-Based Pedometer Intervention

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Background: We evaluated a pedometer-based community intervention under real-world conditions. ***Methods:*** Participants (n = 559) provided demographic and health information using surveys and steps/d at baseline and during the last week the participants were in the program. A 1-year follow-up was conducted, but in keeping with real-world conditions, no incentives were offered to participate. ***Results:*** Participants (89% female, age 48.1 [SD = 12] years) took 7864 (3114) steps/d at baseline. Postprogram voluntary response rates to mailed surveys were 41.3% at 12 weeks and 22.8% at 1 year. Program completers reported significantly higher steps/d at 12 weeks (~12,000 steps/d) and 1 year (~11,000 steps/d) compared with baseline. ***Conclusions:*** The improvement in steps/d in this real-world implementation was consistent with more controlled studies of pedometer-based interventions. Low response to voluntary follow-up is a study limitation but is expected of real-world evaluations.

Keywords: community-based research, intervention study, mental health, metabolic health, pedometry, physical activity

Many physical activity (PA) interventions that have been shown to be efficacious have been carefully delivered under highly controlled conditions and directed at high-risk individuals or small groups.[1] Generalized health-promotion strategies aimed at the community level are required for widespread impact, but their effectiveness has not been well studied.[1] Program evaluation examines the effectiveness and feasibility of programs under real-world conditions, acknowledging that such programming is "rarely delivered under ideal circumstances and with optimal resources."[2 (p. 11)] Specifically, real-world evaluation undertaken at the community level is shaped by limited resources including budgets, time, and personnel expertise and availability.[3] Associated data and analysis constraints (eg, loss to follow-up, lack of a true control group) must be documented but also tolerated to some extent if useful and valuable implementation information is to be disseminated beyond local stakeholders, for example, through traditional channels, including peer-reviewed journals.

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Walking is accessible to almost everyone, improves cardiovascular fitness,[4] and delays onset of type 2 diabetes in persons with impaired glucose tolerance when combined with modest weight loss.[5] Walking is safe, inexpensive, and easy[6] and provides benefits by improving health in sedentary populations[7] and preventing age-related disabilities.[8] Walking programs that involve the use of pedometers have recently gained popularity in North America.[9–11] Pedometers provide accurate feedback to the wearer regarding walking. Combined with behavior-modification programs, pedometers elicit immediate and dramatic increases in walking.[9,12] Increased awareness and pedometer use among Canadians predicted changes in walking.[13] A pedometer-based PA intervention, the First Step Program (FSP), has been rigorously studied and is effective in increasing PA in sedentary individuals.[14,15] Evaluation of translation of such program templates to real-world conditions is the logical progression in dissemination of evidence-based interventions. Herein we describe a real-world evaluation of the FSP as a community-based PA intervention.

Methods

Structure of the First Step Program

The FSP is a facilitated behavior-modification program based on the principles of self-efficacy and social support; the common clinical practices of goal setting, self-monitoring, and feedback; and the premise that walking can be increased in one's daily routine. It was created by Dr. Catrine Tudor-Locke in completion of her dissertation requirements at the University of Waterloo;[16] the theory underlying the FSP was fully articulated before its first implementation and includes elements of social cognitive theory and the transtheoretical model.[17] Briefly, for 4 weeks, participants meet in small groups once weekly with a trained facilitator who describes the FSP and helps participants develop strategies and goals for increasing PA. Participants set individualized goals based on their perceived abilities, time constraints, and other personal issues. During the next 8 weeks, participants continue the FSP independently, wearing their pedometers daily and recording their steps in an activity diary. As described previously,[17] the critical inputs include a self-structured, individualized program to increase walking, with follow-up contact from the facilitator to assist with goal setting and plan for relapse, and provision of tools for self-monitoring, feedback, decision balance sheets, and self-contracts. The expected outcome is an increase in PA (walking) as determined objectively by the pedometer. Extraneous factors that might be important include the characteristics of the participant, the facilitator, and the meeting site. In addition, support provided by peers and personal networks can influence the outcome.

Residents of Prince Edward Island (PEI), Canada, have a higher prevalence of overweight/obesity and lower participation in PA than average Canadians.[18] The PEI Active Living Alliance, whose mandate is to provide PA opportunities and programs, implemented delivery of the FSP. The program cost was subsidized to promote participation from lower income residents, with participants paying $15 (~40% of the total cost). A coordinator provided program organization, marketing, volunteer facilitator recruitment and training, oversight of program

delivery, and data collection. Most volunteer facilitators were community recreation coordinators with experience leading PA programs. They received training but no other specific incentives. Facilitators conducted registration, collected surveys, and delivered the program content in meetings as described earlier.

Study Population

This study was approved by the Research Ethics Board of the University of PEI, and informed consent was obtained from participants. The FSP was delivered between December 2002 and April 2003. Participants (n = 559) self-selected into 1 of 38 groups (8–30 per group), which were located in several cities, towns, and villages to provide both urban and rural residents access to the FSP. The meeting sites varied according to local availability and included schools and community centers or other sites large enough to provide opportunity for an inside walk if the weather was inclement. There were no exclusion criteria. A measured subset of 105 participants in 9 groups (randomly selected by group) provided daily steps/d data. Group definitions are provided in Table 1. In previous research, we showed that FSP program completers reached a new, sustainable plateau of activity in about 4 weeks. Moreover, using a 10-week completion criterion, significant improvements in health parameters were recorded.[14] To facilitate comparisons with our previous study, *completers* were defined as those adhering to the FSP for at least 9 weeks. *Program completers* and *noncompleters* are defined in Table 1. At 12 weeks, 231 participants (41.3%) replied to a mailed questionnaire. Response rate to the 1-year follow-up (another mailed questionnaire) was 22.8%. No incentives were offered to participate in any follow-up surveys, as is typical of real-world implementation.

Measures

Demographic Data. Self-reported information on participant sex, age, education, job status, and typical work-related (highly sedentary, ie, sitting >75% of the time, to highly active, ie, moving about >75% of the time) and leisure-time activity (frequency of PA sufficient to induce an increase in heart rate or sweating) were assessed by questions that have been established and commonly used as part of the Canadian Physical Activity, Fitness and Lifestyle Appraisal System[19] and also previously used in other evaluations.[14,15,20] Selection of a questionnaire for real-world evaluation must consider its practicality and local comparability. Participants reported diagnoses (yes or no) of heart disease, hypercholesterolemia, hypertension, or type 2 diabetes.

PA Data. Baseline ambulatory activity was assessed by averaging pedometer-measured (Yamax SW-200, Steps Count, Deep River, ON, Canada) steps/d for 7 days before the first meeting. The pedometer was sealed for this period. During the program, participants recorded weekly activity goals and steps/d in an activity diary, which was collected at 12 weeks from the measured subset. Other participants reported their baseline and final steps/d (averaged over the previous 7 days) in a mailed survey. Survey data of changes in steps/d at 12 weeks were similar to the activity diary data (see Results).

Table 1 Definitions of Program Participant Classifications

	All	Measured subset	Completers	Noncompleters	Measured subset (12 weeks)	1-year follow-up
N	559	105	189	42	71	128
Defined as	All those registering and completing baseline surveys, including SF-20	A subset of all participants from 9 randomly selected groups who were measured at baseline	Those participants who wore pedometers for 9 or more weeks and who responded to the mailed survey of physical activity and SF-20 at 12 weeks	Those participants who wore pedometers for less than 9 weeks and who responded to the mailed survey of physical activity and SF-20 at 12 weeks	Those from the measured subset who provided steps/d data from diaries, as well as all survey data	Respondents to the mailed survey of physical activity, pedometer usage and SF-20 at 1 year, includes completers and noncompleters

General Health Survey. The general health survey (SF-20),[21] consisting of 20 questions in 6 health dimensions (see Results), was administered to all participants at enrolment. After 12 weeks and 1 year, the survey was repeated by mail.

Follow-Up at 1 Year. Together with the SF-20, a short questionnaire about continued use of the pedometer, usual steps/d (if known), and perceived PA level was mailed to all participants. Frequency of moderate leisure-time PA was compared with similar data collected at baseline using the same instrument. The steps/d at 1 year was compared with baseline and 12 weeks for pedometer wearers. As stated previously, in keeping with real-world implementation, no incentives were provided for follow-up responses.

Statistical Analyses

Data are presented as means (SD) or as a proportion of the respondents or enrollees. Participants were their own controls; therefore, changes in parameter values were compared by paired *t* test or repeated-measures ANOVA, as appropriate. Proportional data were compared by a chi-square test.

Results

Compliance and Participant Characteristics

The number of participants complying with program requirements at the 12-week and 1-year follow-ups totaled 231 (41.3%) and 128 (22.8%), respectively (Table 1). The typical participant was female and 48 years old (Table 2). Half (50.8%) of participants had a postsecondary degree, and 67.1% were employed or in school. These characteristics were similar in the groups surveyed at the follow-up time points or in the measured subset (Table 2). There was more of a tendency for completers (74%) to be physically active in leisure time 3 or more times per week than for all participants (66%, $P < .1$) and noncompleters (68%, $P = .045$). Noncompleters were also significantly older ($P = .021$) and more likely to report a diagnosis of heart disease ($P = .004$). There was no difference in the baseline steps/d in the measured subset (Table 2).

Extraneous factors related to program compliance were not systematically evaluated under the scope of this implementation, but several of these factors logically relate to group dynamics (eg, characteristics of the facilitator, the meeting site, group size, and support from other group members). Analysis of program compliance by group showed wide variability in response to the questionnaires at 12 weeks (0% to 90%). Participants were not asked what, if any, group dynamics affected their program compliance. A post hoc analysis showed that group size was not correlated with compliance (Pearson $r = –.186$, $P = .27$). However, groups in the measured subset were significantly more likely (57.6% versus 39.8%, $P < .001$ by chi-square test) to comply with program requirements, even though an additional meeting was required.

Weather can also affect physical activity.[22,23] When group compliance herein was correlated (post hoc) with weather characteristics, there was a positive correlation between total amount of snowfall in the month the program started and

Table 2 Baseline Descriptive and Anthropometric Data of All Participants, Completers, and 1-Year Follow-Up Respondents

	All participants	Measured subset	Completers	Noncompleters	Measured subset (12 weeks)	1-year follow-up
N	559	105	189	42	71	128
Sex						
female	89.3%	87.9%	85.6%	90.5%	88.1%	84.6%
male	10.7%	12.1%	14.4%	9.5%	11.9%	15.4%
Age (y)[a]	48.1 (12) Range: 18 to 83	47.9 (10.7)	49.9 (11.3)	51.3 (13.6)[b]	46.6 (11.3)	45.3 (12.0)
Education						
no high school diploma	9.1%	4.0%	7.1%	4.9%	2.4%	6.5%
high school diploma	30.1%	34.4%	40.7%	45.2%	30.9%	34.2%
university or college degree	45.3%	58.6%	48.3%	42.8%	66.7%	50.4%
postgraduate degree	5.5%	3.0%	3.9%	7.1%	0	8.9%
no response	8.2%	0	0	0	0	0
Employment						
not employed or in school	32.9%	20.4%	33.3%	47.6%	21.4%	40.5%
part-time employed or in school	17.8%	19.4%	19.0%	11.9%	21.4%	18.7%
full-time employed or in school	49.3%	60.2%	47.7%	40.5%	57.1%	39.8%

(continued)

Table 2 *(continued)*

	All participants	Measured subset	Completers	Noncompleters	Measured subset (12 weeks)	1-year follow-up
Health						
current smoker	9.1%	5.0%	7.9%	7.1%	0	4.2%
heart disease	3.4%	1.0%	1.3%	9.5%[b]	2.4%	3.3%
hypertension	22.0%	25.3%	22.9%	23.8%	28.6%	21.1%
hypercholesterolemia	18.5%	17.2%	17.0%	16.6%	16.7%	10.6%
type 2 diabetes	4.1%	1.0%	2.6%	4.8%	0	3.3%
Physically inactive in leisure time[c]	33.8%	29.9%	26.0%	33.3%[b]	24.4%	26.8%
Physically inactive at work[d]	53.9%	50.5%	56.1%	59.5%	63.3%	54.7%
Steps/d[a]	not done	7864 (3114)	See Figure 1	See Figure 1	7834 (3514)	not done

[a] Data for age and steps/d are given as the means ± SD.
[b] $P < .05$ comparing noncompleters with completers.
[c] Leisure-time physical inactivity was defined as a self-report of <2 times per week of leisure-time physical activity sufficient to induce an increase in heart rate or sweating.
[d] Physical inactivity at work was defined as a self-report of "sitting more than 50% of the time."

compliance at 12 weeks (Pearson $r = .898$, $P = .038$). No relationship with total rainfall or mean temperature was observed.

Physical Activity Outcomes

Steps/d of the 46 measured subset completers increased from ~8000 to ~12,000 steps/d (50%) after the FSP (Figure 1). The steps/d attained each week was similar to the activity goal. Self-reported data from completers (n = 189, Figure 1) were not different from the measured subset ($P > .05$ for both baseline and 12-week steps/d). Although noncompleters (n = 42) had a similar baseline as completers, they did not increase steps/d during the weeks they remained in the program.

Analysis of outcome by group indicated considerable variability, with increases in steps/d ranging from 277 (SD = 2852; group n = 8) to 6189 (SD = 4678; n = 8). There was no correlation of change in steps/d by group with group size or the proportion of group members compliant with program requirements.

General Health Survey

The baseline SF-20 score was not significantly ($P = .064$) higher in completers (76.4 [SD = 7.2], n = 189) versus noncompleters (73.9 [SD = 8.1], n = 42). There were increases in mental health (change in score 0.80 [SD = 0.30], $P = .0034$) and

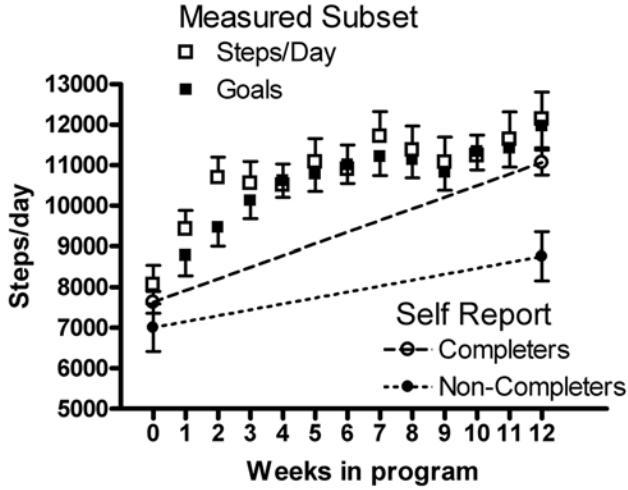

Figure 1 — Absolute increase in steps/d (open squares, mean [SE]) compared with stated goals (closed squares) for the reference sample (measured subset), n = 46. There were no significant differences between goals and achieved steps/d. Also shown are baseline steps/d and steps/d at weeks 9 to 12 for all program completers (n = 189) compared with noncompleters (n = 42) responding to the mailed survey. There was no difference in baseline steps between completers and noncompleters, but the steps recorded in the last week that the noncompleters participated was significantly lower than that of the completers at 9 to 12 weeks ($P < .05$). There was no difference in either the baseline or the steps/d at weeks 9 to 12 compared with the measured subset for the program completers.

general health scores (change in score 0.87 [SD = 0.25], $P = .0094$) for completers but no changes in any dimension in noncompleters (Figure 2).

One-Year Follow-Up

About 50% of all respondents (65 out of 128) and 58% of completers reported higher PA than before the FSP (Table 3). Pedometers were still worn (always or sometimes) by 68% of completers and 31% of noncompleters (Table 3). The steps/d at 1 year compared with baseline were significantly higher ($P < .01$) for

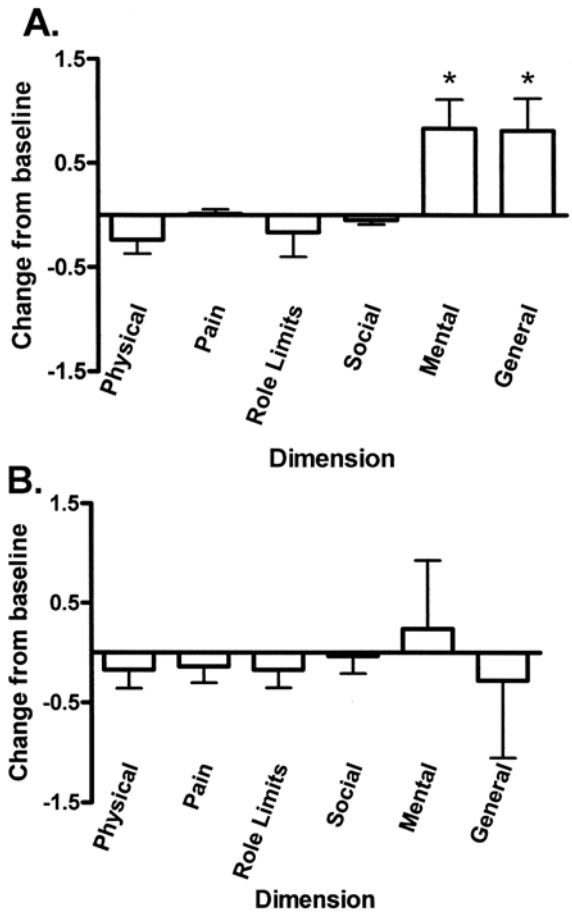

Figure 2 — Perceptions of participants' health, as measured by the General Health Survey, SF-20, for (A) completers of the First Step Program versus (B) noncompleters of the program. The SF-20 measures health in 6 dimensions, as shown. Data are presented as the mean change in score for each dimension, comparing the post- to preprogram surveys. An increase in score represents an improvement of one's perception of one's health. *$P < .005$ compared with baseline by paired *t* test.

completers (Figure 3). Only 2 noncompleters reported steps/d in the 1-year follow-up (9750 steps/d compared with 9060 steps/d at baseline and 11,055 steps/d at 12 weeks), which precluded statistical comparisons. The proportion of respondents engaging in moderate PA more than 2 times per week was higher at 1 year than at baseline (Figure 4).

After 1 year, completers had similar SF-20 scores compared with baseline. Compared with 12 weeks, the mental and general functioning scores were lower. No significant changes in any health dimensions were detected in noncompleters at 1 year, either compared with baseline or 12 weeks (not shown).

Discussion

Community-oriented agencies delivering PA interventions have little objective information about program effectiveness. Traditionally, program evaluation is informal and subjective. Whether informal or formal, program evaluation is typically consumed only by local stakeholders and not necessarily disseminated more widely, despite its inherent value and utility for other community practitioners.[3] Herein, we document that the community-based FSP increased PA and improved perception of mental and general health in participants who wore pedometers and recorded steps/d for at least 9 weeks. After 1 year, many completers maintained higher PA but not improved health perception.

The increase in steps/d of completers compares favorably with FSP outcomes in workplaces[14] and in a randomized control trial (RCT) of diabetic patients.[15] Although the number of completers in the measured subset was less than 10% of the original number of all participants (46/559), their recorded increase in steps/d was similar to the larger group of completers submitting self-reported data and was statistically greater than baseline steps/d. An increase of ~3000 steps/d is also likely to be biologically significant, based on results showing improvements in waist circumference and resting heart rate in a similar workplace-based study.[14] Thus, the accumulating data show that simple behavior-modification programs focusing on walking and the unique feedback properties of pedometers increase PA, at least in the short term. Importantly, primary outcomes of the community-based FSP were achieved with less stringent oversight than in the RCT. The attainment of increased PA might, therefore, relate more to maintaining the integrity of structural elements of the program theory underlying the FSP than the method of implementation.

For example, individualized goal setting based on baseline values, previous achievement, and feedback is an important component of the FSP.[17] Completers increased their goals by ~700 steps/d in each of weeks 1 to 3, an additional time commitment of ~10 min/wk, reaching a plateau thereafter. Setting reasonably high goals increases commitment and improves outcomes.[24] Completers met their goals from the outset and sustained their activity for the duration of the program. This might not be true for noncompleters,[25] whose self-efficacy might be lower.[24] Self-selected goal setting with reference to a known baseline or previous accomplishments, combined with pedometer monitoring, are effective in promoting change in PA. Elsewhere, participants prescribed increases in steps/d of either 10% or 5% every 2 weeks for 8 weeks successfully increased steps by 40% and 25%, respectively.[9,26] Prescribing goals beyond the participant's immediate reach

Table 3 Responses to 1-Year Follow-Up Questionnaire (% of Respondents)

Question and Response	All respondents N = 128	Completers[a] N = 66	Noncompleters N = 14
Are you more active than before the FSP?			
always	50.8%	57.6%	28.6%
sometimes or never	49.2%	42.4%	71.4%
Have you continued to wear your pedometer beyond the end of the FSP?			
always	14.8%	18.1%	7.1%
sometimes	48.5%	50.0%	24.0%
never	36.7%	31.9%	68.0%

Abbreviation: FSP, First Step Program.

[a] Completer or Noncompleter categories were determined from data collected at 12 weeks. The 48 individuals not classified had not responded to the mailed survey at 12 weeks, and therefore, their program completion status was unknown.

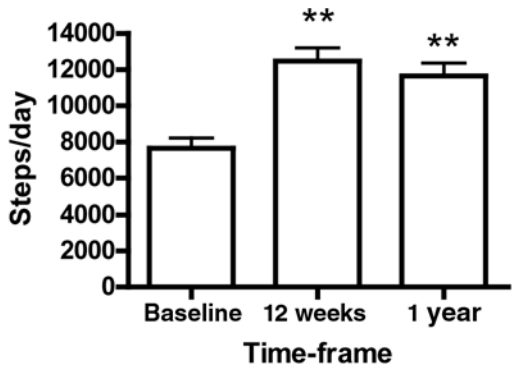

Figure 3 — Comparison of steps/d at the 1-year follow-up of program for completers (means [SE], n = 34) who still wore their pedometers some or all of the time. Data represent average number of steps/d over the 7-day baseline collection period, the last week the participants recorded steps in the 9- to 12-week interval, and 7 days measured at the time of the 1-year survey. $^{**}P < .001$ compared with baseline and 12-weeks by 1-way ANOVA followed by the Bonferroni post hoc test.

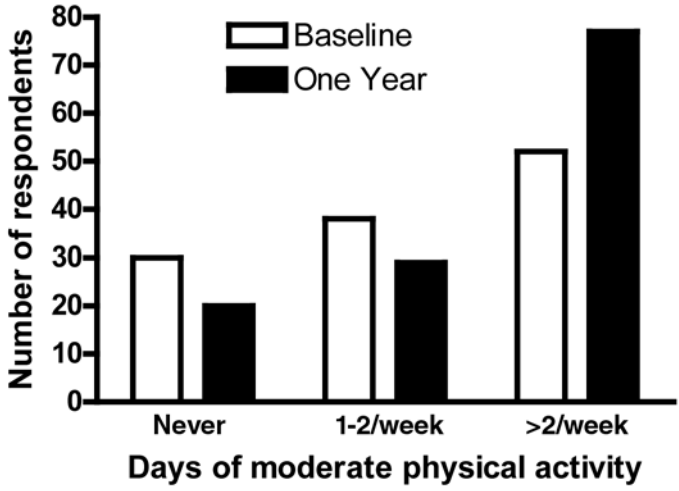

Figure 4 — Frequency of moderate-intensity physical activity. Participants were asked how many times per week they engaged in physical activity vigorous enough to elevate heart rate or cause sweating. The number of respondents answering never, 1 to 2 times per week, or >2 times per week is shown for baseline (open bars) and at the 1-year follow-up for 126 respondents. Chi-squared analysis indicates a significant increase in the frequency of moderate physical activity ($P < .05$).

might be less sustainable, as exemplified by a study in which 42% of participants achieved the target of 10,000 steps/d at 4 weeks but only 11% of enrollees sustained this level of activity for 12 weeks.[27] Achieving goals early in a program while still receiving direct support is associated with long-term adherence.[25,28]

Personalized goal setting (versus complying with universally set goals) is a behavioral technique that is congruent with longer term success.[29]

Another critical input of the FSP is the pedometer, which provides monitoring of physical activity and instantaneous feedback to the participant. Both pedometer and survey data suggested that ~50% of participants had higher PA at the 1-year follow-up, whereas relapse to baseline occurred by 24 weeks in type 2 diabetic patients.[15] Interestingly, the sustained increase in PA was achieved despite only 15% of respondents regularly wearing pedometers. In a workplace-based study, some participants indicated that a major benefit of pedometer wearing was creating awareness of usual PA levels but was less necessary once a strategy to achieve higher PA was formulated.[30] Moreover, the combination of facilitated group support and pedometer feedback might be important. Simply wearing a pedometer did not elicit long-term behavior change, and goal setting was suggested to be an important adjunct.[31] One caveat is that only 20% of the original cohort responded to the survey at 1 year. Respondents might have been biased in favor of those who felt the program had benefited them.

Group dynamics might also affect program outcomes. In this study, compliance with program requirements was strongly affected by group. The outcomes measured were not specifically targeted to determine the effect of group-related variables. However, participants from groups in the measured subset were significantly more likely to provide follow-up data at 12 weeks, suggesting that these individuals had a higher commitment to program completion. Lack of significance of other group factors that could be accounted for in this study suggest that the interpersonal dynamics of the group and certain characteristics of each participant, not measured by us, might account for differences in group compliance and steps/d outcomes.

Because group factors are acknowledged to influence individual outcomes,[17] selection of random groups rather than random individuals might also have influenced the conclusions reached in this study. Individuals in the measured subset had similar demographics and health concerns as all participants, but some differences were noted: combined full- and part-time employment was ~80% versus 67% in all participants and 96% of the measured subset had at least a high school diploma versus 81% of all participants. These educational and employment differences might have contributed to the higher compliance in this group, but simply selecting these groups might also have altered individuals' tendency to comply. Selection of a similar number of individuals across all groups would have alleviated these issues but was impractical given the resources available and the geographic separation of the program sites. Completers reported improved mental health and general health, whereas physical health was unaffected. Because the cohort studied reported good physical health at baseline (92% of maximum), a "ceiling effect" was likely observed. In comparison, the baseline mental health and general health scores were ~80% of maximum. Elsewhere, a combination of diet and PA intervention yielded improvement in mental health in overweight women.[32] The SF-20 scores in noncompleters were unchanged at 12 weeks, suggesting that program completion improved health perceptions. Although these small changes might not be clinically relevant, the positive perceptions of the completers might help sustain PA and encourage enrollment in other PA programs. The changes in completers were not sustained at 1 year despite a continued

increase in PA, suggesting that additional, temporary factors contributed to the short-term benefits. Alternatively, perceptions of changes were tempered as participants reset expectations. The SF-20 was developed to measure health perceptions in individuals with chronic illness and is not often used for the general population. However, a longer companion survey with some overlap in items, the SF-36, is sensitive to longitudinal changes in the general population.[33]

This evaluation of the FSP delivered in a community setting to the general public revealed similar outcomes as the FSP conducted as a randomized clinical trial in type 2 diabetic patients[15] and delivered in workplaces to a sedentary population.[14] A limitation to widespread delivery is that community-based PA interventions involving an active interface, such as group meetings, are expensive to deliver.[34] However, the actual interface of the FSP is only 4 meetings over 4 weeks, compared with longer lifestyle interventions.[35] Both in theory[17] and in practice,[25] the meetings are an important factor, and attendance predicts program retention. Moreover, this and previous studies of the FSP indicate that 4 weeks is sufficient to provide proficiency with pedometer use, goal setting, and record keeping, because the PA increase observed at 4 weeks was sustained for the duration of the program. Costs could be reduced by charging participants for the full cost of administering the program. However, to maximize participation among low-income groups, the cost was subsidized by the government department sponsoring the program. Despite this, half of the participants had a higher degree, indicative of higher socioeconomic status and greater than the proportion of the adult population with a college or university diploma (~40%[36]). It might be possible to increase recruitment among disadvantaged groups by more targeted marketing strategies and by increasing the number of programs held in rural areas. The total cost was reduced substantially by recruiting volunteer facilitators. By training community recreation department personnel and providing them with resources including a detailed description of the FSP curriculum, the likelihood that the program will be offered in the future is increased.

Nearly 90% of the participants in the FSP were women. Women have lower levels of pedometer-determined PA than men[37] and cite lack of time as a significant barrier to increasing PA.[38] Community and workplace supports might be important for providing women with opportunities for PA.[38] Other pedometer-based PA interventions also had a higher proportion of female participants.[9,14] It is noteworthy, however, that men were just as likely as women to complete the FSP. Further work is required to determine what factors underlie the apparent gender-biased appeal of pedometer-based interventions.

This study examined the effect of a PA program in community groups operating in the real world. Evaluation of community-based PA programs is challenging given the inherent budget, time, data, and political constraints.[3] Enrollees might balk at participating in the research component, particularly when an additional time commitment is required. Community groups have limited resources for evaluation, and volunteers require special training to administer consent forms and surveys. Here, baseline evaluation was manageable because detailed measurements were performed on a subset of the total cohort. However, resources for follow-up were limited, as is typically the case, and a follow-up survey was administered without incentives to participate, which in turn lowered response rate and increased the reliance on self-reported steps/d data. Program evaluation would be

enhanced by provision of trained personnel to assist facilitators in data collection and survey follow-up; however, such strategies are unlikely to be given priority in real-world implementation against more pressing community demands.[3] Although a RCT might have made the findings more valid, the reality is that community-based interventions such as the FSP are rarely conducted under such controlled conditions. Despite this limitation, quasi-experimental evidence provides support for real change because noncompleters did not have significant changes in PA or health perceptions.

In summary, this evaluation of wide-spread community dissemination of a theory-based PA program yielded similar outcomes to more rigorous implementations of the FSP. Adherence to critical inputs underlying the program theory of the FSP with respect to individualized, self-selected goal setting, personal follow-up in group meetings, and provision of monitoring and feedback tools appears sufficient to maintain program integrity provided adequate training is provided to volunteer facilitators. In completers, an increase in pedometer-determined PA was observed for extended time in the program, and long-term results suggest persistent behavioral changes. However, because this type of community-based intervention is rarely formally evaluated (or if so, rarely disseminated past local stakeholders), the findings are of practical importance to policy makers, funding agencies, and program directors charged with motivating sedentary populations to reap the multiple rewards of a physically active lifestyle.

Acknowledgments

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