

Effectiveness of a Scaled-Up Arthritis Self-Management Program in Oregon: Walk With Ease

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Objectives. To evaluate the effectiveness of Walk With Ease (WWE), an evidence-based arthritis self-management program that was scaled up in Oregon in 2012 to 2014.

Methods. Guided by the RE-AIM (Reach, Effectiveness, Adoption, Implementation, Maintenance) framework, we collected participant surveys and attendance records and conducted observations. Preprogram and postprogram, participants self-reported pain and fatigue (scale: 0–10 points; high scores indicate more pain and fatigue) and estimated episodes of physical activity per week in the last month.

Results. Recruitment successfully reached the targeted population—sedentary adults with arthritis ($n = 598$). Participants reported significant reduction in pain (-0.47 points; $P = .006$) and fatigue (-0.58 points; $P = .021$) and increased physical activity (0.86 days/week; $P < .001$). WWE was adopted by workplaces and medical, community, faith, and retirement centers. Most WWE programs were delivered with high fidelity; average attendance was 47%.

Conclusions. WWE is suitable for implementation by diverse organizations. Effect sizes for pain and fatigue were less than those in the original WWE studies, but this is to be expected for a large-scale implementation.

Public Health Implications. WWE can be effectively translated to diverse, real-world contexts to help sedentary adults increase physical activity and reduce pain and fatigue. (*Am J Public Health*. Published online ahead of print October 13, 2016: e1–e4. doi:10.2105/AJPH.2016.303478)

Scaling up evidence-based programs is a key stage in translating evidence into practice.^{1,2} The aim of scaling up evidence-based programs is to affect population-level health by increasing access and availability; however, little is known about the extent to which scaled-up evidence-based programs maintain effectiveness when implemented in real-world settings.^{1,3}

In addition to effectiveness research, evidence about contextual factors that influence evidence-based program delivery and effect outcomes is needed to facilitate translation and to inform scale-up efforts. The RE-AIM (Reach, Efficacy/Effectiveness, Adoption, Implementation, Maintenance) evaluation framework promotes the reporting of additional factors likely to affect

program outcomes in an effort to facilitate the translation of evidence-based programs to practice (Table 1 includes definitions of RE-AIM dimensions).⁴ We used RE-AIM to examine the effectiveness of Walk With Ease (WWE), an evidence-based program that teaches arthritis self-management through physical activity,^{5,6} scaled up over 2 years in Oregon.

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METHODS

The Centers for Disease Control and Prevention (CDC) awarded an Arthritis Program grant to the Oregon Health Authority to fund the scale-up of approved arthritis evidence-based programs.^{2,7} The Oregon Health Authority chose WWE from the CDC’s approved evidence-based program list for its low cost and simplicity.⁶ WWE consists of group classes facilitated by certified lay leaders that meet 3 times a week for a total of 18 sessions to teach participants about arthritis self-management and to initiate a walking routine.⁵

Oregon State University Extension Service was contracted by Oregon Health Authority to lead the WWE scale-up. The Extension Service issued an open invitation via statewide e-mail discussion lists, presentations at state conferences, and word-of-mouth to community organizations to partner in scaling-up. In exchange for recruiting volunteer WWE leaders and participants and delivering WWE programs, partnering organizations received free leader training, program materials, and technical support. Partners recruited participants with various methods including advertisements, fliers, and word-of-mouth. The total enrollment goal, established by the Oregon Health Authority and CDC, was 600 participants over 2 years. The funds provided by the contract were equivalent to \$100 per participant.

TABLE 1—Major Findings of Walk With Ease (WWE; 36 Programs) Scale-Up Using the RE-AIM⁴ Evaluation Framework: Oregon, 2012–2014

Data Collected (Measures)	Major Findings
Reach—characteristics of the sample	
Sociodemographic profile of participants (self-report) collected via WWE registration forms	
Age (n = 356), y, mean \pm SD	68.8 \pm 13.8
Female (n = 429), %	82
Non-Hispanic White (n = 355), %	91
Arthritis (n = 287), %	71
Meeting physical activity guidelines (n = 210), %	38
WWE classes attended (n = 397), ^a mean \pm SD	8.5 \pm 4.6
Effectiveness—effect of intervention on health outcomes	
Participant outcomes collected via presurveys and postsurveys (self-report; n = 292)	
Pain ^b	−0.47 points; <i>P</i> = .006; ES = 0.15
Fatigue ^b	−0.58 points; <i>P</i> < .021; ES = 0.17
Days exercised per week in the past month	0.86 d/wk; <i>P</i> < .001; ES = 0.35
Adoption—characteristics of the sites delivering the intervention	
Characteristics of the 28 organizations that delivered WWE programs, no. (%)	
Retirement center	10 (36)
Community center	7 (25)
Medical	4 (14)
Workplace	4 (14)
Church	3 (11)
Implementation—extent and fidelity of intervention delivery	
Fidelity checklists collected by research staff (n = 32), ^c mean \pm SD	15.0 \pm 3.3
WWE classes delivered by organizations, ^a mean \pm SD	16.6 \pm 2.5
Participant satisfaction with WWE (n = 156), ^d mean \pm SD	
Satisfied	3.6 \pm 0.55
Gained new information	3.5 \pm 0.53
Benefited from	3.5 \pm 0.53
Would recommend WWE to others	3.7 \pm 0.51
Maintenance^e—extent that outcomes are sustained	
Participant confidence to continue walking after program, %	
Extremely confident	48
Fairly confident	46
Slightly confident	6
Not confident	0.7

Note. ES = effect size; RE-AIM = Reach, Effectiveness, Adoption, Implementation, Maintenance.

^aThe WWE program has 18 sessions.

^bScored 0–10 points; high scores indicate more pain or fatigue.

^cPossible score ranges from 0 to 19.

^dResponse options: strongly disagree = 1, disagree = 2, agree = 3, strongly agree = 4.

^eMaintenance is typically measured 6–12 mo postintervention, but we have included participants' confidence to continue walking as a preliminary indicator of maintenance.

WWE leaders recorded attendance at each session and collected survey data from participants both preprogram and postprogram.

Each participant's demographic information was collected at baseline as part of the enrollment process. Participants could choose

not to answer any question on data collection forms, and 1 large worksite of 166 participants chose not to participate in any data collection. (Figure A, available as a supplement to the online version of this article at <http://www.ajph.org>, shows enrollment information.) Neither WWE participants nor leaders received incentives to participate in the evaluation.

We assessed participants' pain, fatigue, and physical activity levels preprogram and postprogram with measures drawn from the Behavioral Risk Factor Surveillance System (2011) questionnaire.⁸ Pain and fatigue were assessed on a scale of 0 to 10, with high scores indicating more pain or fatigue.⁸ Physical activity was assessed via participant-estimated type, duration, and episodes per week in the last month.

The characteristics of the partner organizations delivering WWE classes and fidelity scores (range = 0–19) were collected by research staff during program observations. Participant satisfaction and confidence to continue walking after WWE were collected via postprogram surveys. Participants responded to 4-point Likert-type questions indicating their satisfaction with WWE and whether they benefitted from, gained new information, and would recommend WWE to others.

We used linear regression, with a clustered analysis to control for correlations within each WWE class, to examine changes in participant health measures. We calculated effect sizes as the difference in outcome divided by the SD of the outcome at baseline. We used inverse probability weighting to examine the effect of missing data on outcome variables.⁹

RESULTS

During the study period (June 2012–June 2014), 598 participants enrolled in WWE programs. Participants were mostly female (82%), non-Hispanic White (91%), and older than 65 years (mean = 68.8 years; SD = 13.8 years); had arthritis (71%); and did not meet CDC physical activity guidelines preprogram (62%). On average, participants attended 8.5 (SD = 4.6) sessions of the 18-session WWE program, and 64% of the participants attended two thirds of the WWE

classes—the definition of a “completer” as specified by the funder. Noncompleters were more likely to have met physical activity guidelines before the program ($P < .001$).

Participants reported decreased pain (−0.47 points; $P = .006$) and fatigue (−0.58 points; $P = .021$), and increased days of exercise (0.86 days/week; $P < .001$) over the course of the program. Modest to moderate effect sizes were seen for pain (effect size = 0.15), fatigue (effect size = 0.17), and physical activity (effect size = 0.35). Adjustments for missing data had a minimal effect on these associations. (Table A, available as a supplement to the online version of this article at <http://www.ajph.org>).

The 28 organizations that delivered 36 WWE programs included retirement centers, medical facilities, workplaces, community centers, and churches. Average class size was 12.8 participants ($SD = 7.1$). Most WWE programs were free for participants, but 4 organizations chose to implement a \$10 fee. Overall, organizations delivered WWE with good fidelity (mean = 15.0; $SD = 3.3$). Participants reported high satisfaction with their experience (mean = 3.6; $SD = 0.6$). Almost half of the participants were “extremely confident” that they would continue walking after the program.

DISCUSSION

WWE recruitment successfully reached the targeted audience for whom the program was designed—sedentary adults with arthritis. In 2013, the Oregon population with arthritis was largely non-Hispanic White (84%) and female (59%), with a higher prevalence of arthritis among adults aged 65 years or older.¹⁰ Our participants closely resembled this demographic. Consistent with the literature, more women than men participated in WWE.¹¹ Overall, 64% of the participants were considered to have “completed” the program. Given that noncompleters were more likely to meet physical activity guidelines preprogram, this finding underscores the value of WWE in helping inactive individuals initiate a walking routine.

Participants experienced significant reduction in pain and fatigue and increased physical activity over the course of the program. The effect sizes found for pain and fatigue in our study were reduced from those seen in the original study,⁵ likely because participants attended, on average, 46% of the program. Effect sizes are expected to decrease as the scale of implementation increases, partly because of the need to adapt programs to fit participants’ and organizations’ needs.³

The qualities of the WWE program facilitated adoption by diverse organizations. Of the 5 CDC-approved physical activity programs for arthritis,⁶ WWE is the least expensive and simplest program to implement because it has no licensing fees, can be led by volunteers, and requires no special facility or equipment. The diversity of organizations implementing WWE and their tailored use of recruitment approaches facilitated reach by increasing access across multiple audiences and settings.

Overall, organizations delivered the full WWE program and had good fidelity. Participants reported high satisfaction with their experience with the program, suggesting that low attendance among completers was more likely a result of personal conflicts than a result of problems with the WWE program. Although almost all participants reported being very or fairly likely to continue walking postprogram, these findings are preliminary and require follow-up, because previous research indicates that ongoing, supportive groups are needed to support physical activity maintenance.¹²

Additional limitations include that an evaluation of WWE was not funded by the CDC grant. This evaluation was added to the implementation plan post hoc and relied on volunteer leaders to collect data in addition to delivering the program, which contributed to missing data. Other limitations were the inability to follow up with noncompleters, a comprehensive study of fidelity exploring reasons for adaptation, and more detailed characteristics of partnering organizations and volunteer leaders that could inform future efforts to recruit and engage community groups to deliver

evidence-based programs. Despite these limitations, this study adds to the literature by reporting the effectiveness of WWE when scaled up to real-world settings.

PUBLIC HEALTH IMPLICATIONS

WWE can be effectively translated to large-scale, diverse, real-world contexts to help sedentary adults increase physical activity and reduce pain and fatigue. **AJPH**

CONTRIBUTORS

K. P. Conte designed and coordinated all aspects of the study, undertook the final analyses, and developed the article. M. C. Odden consulted on the statistical analyses and interpretation. N. M. Linton conducted exploratory analyses and assisted in data collection and interpretation. S. M. Harvey provided conceptual assistance during the development of the article. All authors read and approved the final article.

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HUMAN PARTICIPANT PROTECTION

All study procedures were reviewed and approved by the Oregon State University institutional review board (approval 5593).

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