



Active Living After Cancer: Adaptation and Evaluation of a Community-Based Physical Activity Program for Minority and Medically Underserved Breast Cancer Survivors

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BACKGROUND: An expanding body of research documents the benefits of physical activity for cancer survivors' physical functioning and quality of life, but few successful models provide community-based physical activity programs to cancer survivors. This report presents an evaluation of Active Living After Cancer, an evidence-based physical activity program for breast cancer survivors, adapted for community delivery to minority and medically underserved survivors. **METHODS:** Survivors were recruited from health care and community settings. The program consisted of 12 weekly group sessions providing training in cognitive and behavioral skills for behavior change, brief physical activity, and cancer survivorship-related content. At the baseline and follow-up, participants completed assessments of their physical activity, quality of life, and physical functioning (6-minute walk and 30-second sit-to-stand test). At follow-up, they also completed questionnaires to measure program content mastery and satisfaction. **RESULTS:** The outcome analysis included 127 participants. Physical activity and quality of life (mental and physical) improved from the baseline to follow-up (all $P < .01$). Physical functioning improved, with increases in sit-to-stand repetitions (mean, 12.5 at the baseline vs 14.9 at the follow-up; $P < .01$) and 6-minute walk distances (mean, 428 m at the baseline vs 470 m at the follow-up; $P < .01$). **CONCLUSIONS:** The results highlight the effectiveness of an evidence-based program adapted for community-based delivery to minority and medically underserved breast cancer survivors. The program could be delivered to improve outcomes in diverse survivor populations. *Cancer* 2022;128:353-363. © 2021 The Authors. *Cancer* published by Wiley Periodicals LLC on behalf of American Cancer Society This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

LAY SUMMARY:

- Physical activity in breast cancer survivors is related to better quality of life and longer cancer-free survival. However, there are few community-based programs to help breast cancer survivors to become more physically active.
- The Active Living After Cancer program was adapted from an evidence-based program and delivered in community-based settings to minority and medically underserved breast cancer survivors. It consisted of 12 weekly group sessions in which participants learned skills to increase their physical activity.
- The program participants increased their physical activity and improved their mental and physical well-being and physical functioning.

KEYWORDS: breast cancer, cancer survivors, community, health disparities, physical activity.

INTRODUCTION

Physical activity after the diagnosis of cancer has been shown to ameliorate many aftereffects of breast cancer and its treatment, such as fatigue, decreased physical functioning, and psychological distress, and to improve health-related quality of life (HRQOL).^{1,2} Additionally, physical activity is associated with reduced breast cancer-related and overall mortality.³ An expert roundtable convened in 2018 by the American College of Sports Medicine reviewed the literature and recommended that cancer survivors undertake at least 150 minutes of moderate-intensity aerobic activity or 75 minutes of vigorous-intensity aerobic activity per week and resistance training at least twice a week to improve overall health or 90 minutes of aerobic exercise or twice weekly resistance exercise to improve physical functioning, HRQOL, and fatigue.⁴

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Despite the documented benefits of increased physical activity for cancer survivors, most do not meet these recommendations.⁵ There are emerging program models to help survivors to increase their activity,⁶ such as supervised rehabilitation and clinic-based or community-based programs, and many have been shown to improve physical functioning.^{2,7,8} Livestrong at the YMCA⁹ has been the most successful in terms of reach; it is available in 791 communities and has been provided to more than 76,000 survivors.¹⁰ Its effects on HRQOL have been documented.¹¹ However, supervised programs are not always consistent with survivor preferences, which lean toward more home-based exercise.¹² Additionally, in-person programs with supervised exercise may be less accessible to minority and low-income survivors, who are more likely to experience financial and transportation barriers as well as interpersonal barriers such as family/caregiving responsibilities and a lack of social/family support.^{13,14}

One promising program for increasing physical activity among cancer survivors is Active Living After Cancer (ALAC), an evidence-based lifestyle physical activity group intervention for breast cancer survivors. Originally developed and tested for sedentary but healthy adults,¹⁵ it was adapted for breast cancer survivors and tested in a randomized trial. Encouraging survivors to increase their physical activity in whatever manner works best for their lifestyle, the intervention improved objectively measured physical functioning and self-reported pain and general health.¹⁶ In 2014, the Cancer Prevention Research Institute of Texas funded ALAC implementation in greater Houston, with a focus on delivery to minority and medically underserved breast cancer survivors, including Spanish-speaking survivors. Delivery of the intervention in a new context required further adaptation. Our objective is to describe the adaptation of ALAC for delivery by community health educators to minority and medically underserved breast cancer survivors and to evaluate the adaptation by documenting the changes made and evaluating the process and outcomes of the adapted intervention.¹⁷ Here we present data on the real-world effectiveness of the adapted ALAC in the program's first 2.5 years, from November 2014 to May 2017. The effectiveness of the program is measured by pre-post changes in participant physical activity, physical functioning, and HRQOL and by mastery of the program's content at the end of the program. In addition, we evaluate the delivery of the program by examining participant recruitment, completion, retention, and satisfaction.

MATERIALS AND METHODS

The evaluation of the ALAC program outcomes used a pretest-posttest design. The 3-month program consists of a 12-session group intervention focused on building behavioral skills for increasing moderate-intensity physical activity. It emphasizes a lifestyle physical activity approach, which encourages participants to undertake brief bouts of moderate-intensity physical activity (eg, taking stairs and taking 10-minute walks). The University of Texas MD Anderson Cancer Center's institutional review board approved the analysis of the evaluation data (protocol PA13-1043).

Setting and Population

The ALAC program enrolled adult breast cancer survivors who had completed their primary cancer treatment (those receiving hormonal treatment were eligible). The original eligibility criteria excluded survivors who had been meeting moderate to vigorous physical activity (MVPA) guidelines for the past 6 months, but only a small proportion met this criterion, and most still wanted to participate, so we dropped this eligibility requirement. Survivors with positive responses on the Physical Activity Readiness Questionnaire¹⁸ were required to obtain medical clearance. We particularly reached out to survivors who were medically underserved, had low health literacy, or were racial and ethnic minorities.

Program Implementation Strategies

The ALAC program model centers on community partnerships to teach the evidence-based program and recruit survivors to participate, with an academic institution coordinating to provide program materials, ongoing training, and evaluation. The implementation of ALAC involved 3 implementation strategies that could be mapped onto the Expert Recommendations for Implementing Change framework.¹⁹

Developing academic partnerships and promoting network weaving

The academic-community partnership was initiated during the trial testing the intervention. MD Anderson, a National Cancer Institute–designated comprehensive cancer center, partnered with the Kelsey Research Foundation (KRF), the not-for-profit charitable arm of a large, Houston-based multispecialty clinic. The network was further expanded for community implementation. MD Anderson served as the training and evaluation hub for the project and provided all program materials, trained health educators, and conducted the program evaluation.

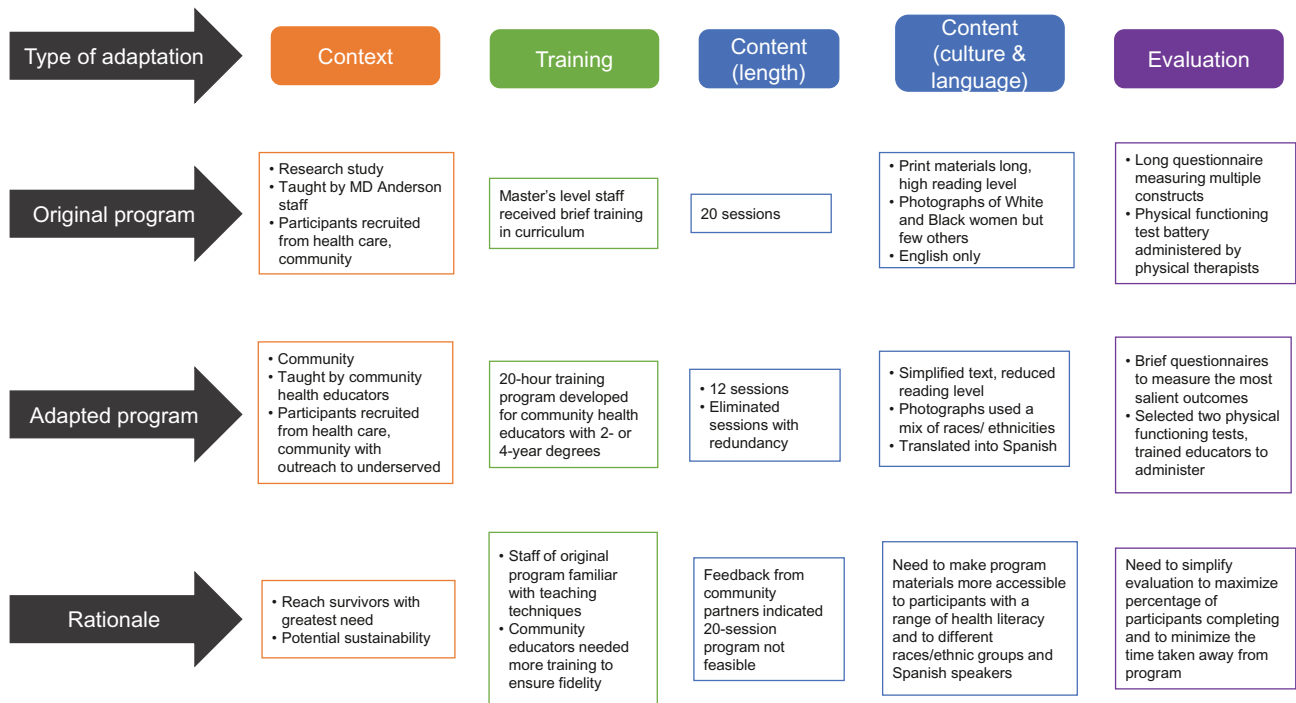


Figure 1. Summary of program adaptations.

KRF hired the health educators, who had associate or 4-year degrees and who promoted the program and taught group sessions. They also provided locations for some of the groups. Furthermore, we leveraged the relationships of both organizations with other community organizations, such as Harris Health (the safety-net health care system for Harris County, Texas), cancer support groups, and area churches; these served as a referral network for the program and provided space for conducting groups.

Program adaptation

The original ALAC program was tested in a randomized trial in which sessions were taught by research staff.¹⁶ To adapt the program for community delivery by bilingual health educators, we made adaptations to educator training, program length and content (cultural acceptability and readability), and evaluation (details in Fig. 1). The program was pilot-tested in 2 groups (English- and Spanish-speaking). Weekly debriefing calls with the health educators were held during the pilot, and adjustments to the curriculum and evaluation procedures were made.

Conduct ongoing training

Face-to-face interactive curriculum training (20 hours in multiple sessions over several weeks) was delivered by

MD Anderson staff (MPH-trained), and it covered learning activity facilitation, physical activity benefits and recommendations, safety issues, and the lifestyle physical activity approach. Skills training on group facilitation, communication, cohesion building, and problem solving was also included. Community resources and tips for the screening/scheduling of program participants were provided, and health educators were trained to collect program evaluation data and enter it into the REDCap database. MD Anderson staff provided ongoing technical assistance as needed.

Intervention

Participant recruitment

Participants were recruited via multiple methods, including outreach to survivorship clinics at safety-net hospitals, contact via phone and email to cancer survivors treated at Kelsey Seybold and Harris Health, presentations/outreach to support groups and cancer resource centers, and tabling and presentations at community events (particularly those focused on survivorship). In particular, we focused on support groups and community events that reached minority communities. We also distributed a newsletter to community members and organizations providing services to cancer survivors and

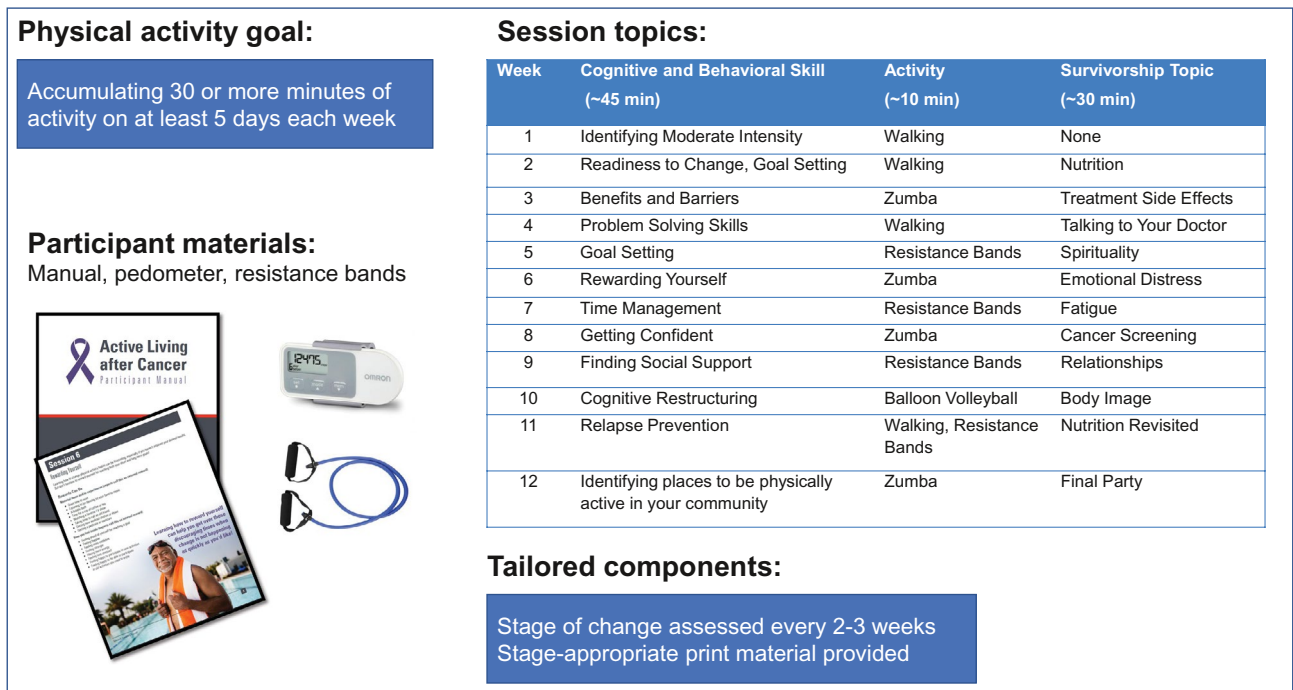


Figure 2. Active Living After Cancer program components.

created a flyer for health care providers to distribute to cancer survivors.

Group program

The 12-week ALAC group is designed to teach participants cognitive and behavioral skills to increase their physical activity with the goal of accumulating 30 or more minutes of MVPA at least 5 days per week. The program was delivered by trained, bilingual (Spanish-English) health educators from KRF at community sites, with separate groups for English and Spanish speakers. To maximize group cohesion, participants attended the same group throughout the program. Intervention details are outlined in Figure 2. Sixteen months into the program (after ~50% of the participants had enrolled), we started a closed Facebook group to promote participation, facilitate members’ communication with one another, and provide health information. The health educators moderated the group and posted announcements, event photographs, and health information.

Data Collection Procedures

Health educators screened survivors by telephone and collected data on demographics, health information, and how survivors heard about the program. Enrolled

participants completed questionnaires and physical performance tests at the beginning and end of the 12-week program. Questionnaires, provided in Spanish or English, were self-administered unless participants chose completion by interview. Health educators recorded session attendance and entered data into a REDCap database.

Measures

Program delivery metrics

The recruitment rate was calculated by dividing the number of survivors starting the program (they attended at least 1 session and completed a baseline questionnaire) by the number of survivors contacted about the program. We calculated the program completion rate by dividing the number of participants completing at least 6 sessions by the number starting the program, and we calculated the retention rate by dividing the number completing the 12-week assessment by those starting the program. The mean number of sessions attended was calculated for those who started and completed the program. Participants rated their satisfaction with the program on a 5-point Likert-type scale. For ease of presentation, the 2 negative ratings (extremely dissatisfied/dissatisfied) and 2 positive ratings (satisfied/extremely satisfied) were combined.

Participant outcomes

Self-reported MVPA was measured with the International Physical Activity Questionnaire (short version),²⁰ which assesses the time spent walking or engaging in MVPA in the last 7 days. We calculated the total minutes per week spent in MVPA; we truncated the length of reported bouts to 3 hours according to the recommendations of the questionnaire developers. HRQOL was assessed with the 10-item Patient-Reported Outcomes Measurement Information System Global Short Form (Global Physical Health and Global Mental Health T scores).²¹

We used the 6-minute walk test (6-MWT) and the 30-second sit-to-stand (STS) test to provide objective measures of physical functioning. The 6-MWT measures the distance walked by the participant in 6 minutes.²² The STS test, which assesses functional lower extremity strength, requires the participant to start from a seated position in an armless chair and stand up and sit down as many times as possible in 30 seconds.²²

At the end of the program, participants responded to open-ended questions assessing program content mastery. We asked them to identify physical activity benefits, community resources for survivorship, and behavioral strategies for increasing physical activity.

Analysis

Descriptive statistics were used to summarize program metrics, describe the sample, and characterize program mastery and satisfaction. The statistical significance of changes in participant outcomes (MVPA, HRQOL, and physical functioning) was tested via paired *t* tests for participants who had completed both the baseline and follow-up assessments. Analyses were conducted with IBM SPSS Statistics (version 23).

RESULTS

Recruitment and Retention

A total of 427 individuals were identified and invited to participate in the program. The recruitment rate was 45%, the completion rate was 74%, and the retention rate was 68% (see Fig. 3). Group attendance and call logs were reviewed, and only 3 injury-type reasons for nonattendance were noted (2 participants did not attend a class because of sore legs, and 1 participant had a hairline wrist fracture). There was no information to indicate that these resulted from participation in the program.

Table 1 compares the baseline characteristics of those who enrolled in a group and those who did not. The sample was highly diverse with respect to education, race,

and ethnicity. Compared with those who were screened but did not enroll, enrollees were older, less likely to be Hispanic and Spanish-speaking, and more likely to have private insurance. Figure 4 displays how survivors heard about the program and the percentage of survivors in each group who enrolled. One point should be noted about the phone call category: All calls were made by KRF personnel on the basis of either lists of interested participants obtained from community events or presentations or lists of Kelsey-Seybold patients. Thus, the recruitment source for those who reported phone calls was originally one of the other sources, but the survivors reported the most proximal source of contact.

Between November 2014 and May 2017, 34 ALAC groups were started, and 32 were completed. Two were canceled because of low enrollment. The groups met at clinics/health care organizations (*n* = 26), community organizations (*n* = 5), or churches (*n* = 3). Participants completing baseline assessments attended a mean of 7.4 of 12 sessions (SD, 3.5). For those completing both baseline and follow-up assessments, the mean session attendance was 9.4 sessions (SD, 2.1).

Participant Outcomes Functioning, MVPA, and HRQOL

Participant outcomes are summarized in Table 2. Participants (*n* = 127) reported significantly more MVPA at the 12-week follow-up (344.6 min/wk; SD, 386.8) than the baseline (172.8 min/wk; SD, 328.4; *P* < .01). The distance covered in the 6-MWT increased significantly to a mean of 469.9 m (SD, 98.3) at the 12-week follow-up from 427.8 m at the baseline (SD, 80.7; *P* < .01). Performance on the STS test improved significantly to a mean of 14.9 repetitions (SD, 5.2) at follow-up from 12.5 repetitions (SD, 4.2) at the baseline (*P* < .01). There were statistically significant improvements between the 12-week follow-up and the baseline in the physical (47.5 vs 45.2; *P* < .01) and mental domains of HRQOL (49.8 vs 48.3; *P* < .01).

Mastery of skill content

Most participants completing the program (73%) identified at least 2 community resources for survivors, whereas 96% were able to recognize at least 2 benefits of physical activity (Table 3). Most reported implementing behavioral strategies for increasing activity such as setting goals (68%), self-monitoring (84%), self-rewarding (64%), finding support among friends and relatives (71%), and solving problems or barriers (64%). Overall, 83% of the participants implemented 2 or more behavioral change strategies.

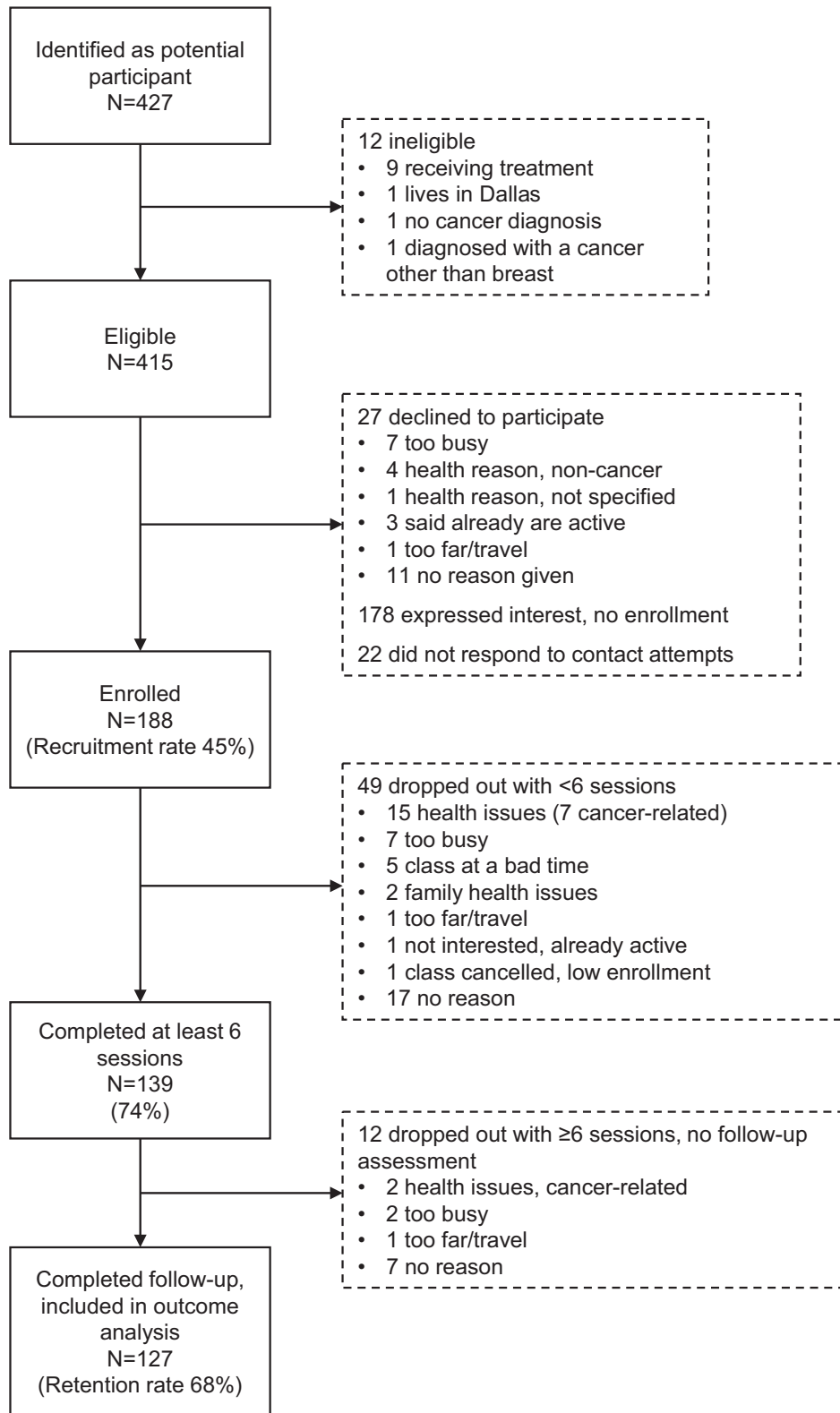


Figure 3. Active Living After Cancer participant enrollment and completion diagram.

TABLE 1. Characteristics of the Participants

Demographic/Clinical Factor	Not Enrolled (n = 229)	Enrolled (n = 187)	P ^a
Age, mean ± SD, y	56.3 ± 11.6	59.6 ± 10.7	<.01 ^b
Race/ethnicity, No. (%)			
White (non-Hispanic)	38 (18.3)	57 (30.6)	<.01 ^c
Black	70 (33.7)	58 (31.2)	
Hispanic	89 (42.8)	50 (26.9)	
Other	11 (5.3)	21 (11.3)	
Missing	21	1	
Education, No. (%)	—		
≤High school/GED diploma		48 (26.5)	
Technical/vocational/<college		56 (30.9)	
Bachelor's degree		40 (22.1)	
Graduate degree		37 (20.5)	
Missing		6	
Insurance status, No. (%)			
Medicare	33 (16.9)	55 (29.9)	<.01 ^c
Medicaid	14 (7.2)	10 (5.4)	
Private	75 (38.5)	90 (48.9)	
Gold Card ^d	54 (27.7)	21 (11.4)	
Uninsured	19 (9.7)	8 (4.3)	
Missing	34	3	
Primary language Spanish, No. (%)			
Yes	71 (31.0)	29 (15.5)	<.01 ^c
No	158 (69.0)	158 (84.5)	
Breast cancer stage, No. (%)	—		
0		18 (10.2)	
I		57 (32.4)	
II		56 (31.8)	
III		20 (11.4)	
IV		9 (5.1)	
Not sure		7 (4.0)	
Missing		20	
Treatment, No. (%) ^e	—		
Chemotherapy		104 (55.6)	
Radiation therapy		128 (68.4)	
Surgery		166 (88.8)	
Hormone therapy		73 (39.0)	
None		4 (2.1)	
Months since breast cancer diagnosis, No. (%)	—		
≤12		22 (12.6)	
13-36		48 (27.6)	
37-60		47 (27.0)	
>60		57 (32.8)	
Missing		13	

Abbreviation: GED, General Educational Development.

^aA P value of .05 was considered statistically significant.

^bIndependent sample t test.

^cχ² test.

^dThe Gold Card is a health care financial assistance program for low-income residents of Harris County, Texas.

^ePercentages exceed 100% because some participants received multiple treatments.

Satisfaction

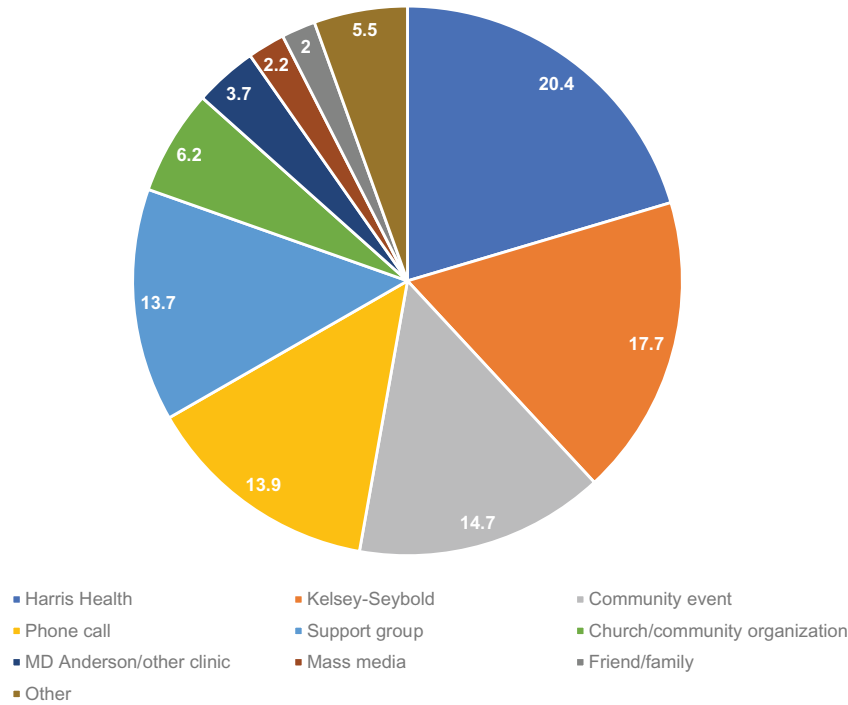
Nearly all participants were satisfied with the program (98%; Table 3). They reported that the program helped them to be more physically active (97%) and feel better physically (92%) and emotionally (83%). Nearly all (98%) would recommend ALAC to another cancer survivor.

Additional analyses of changes in activity, HRQOL, and physical functioning by age and race/ethnicity were performed (see the supporting information). Similar changes were seen across racial/ethnic groups and age groups except for physical functioning, for which there was less improvement in older survivors.

DISCUSSION

Experts have called for increased attention to the implementation of evidence-based programs to help cancer survivors to be more physically active.^{6,23} This article responds to that call. Our evaluation shows that ALAC can be tailored to the needs of diverse breast cancer survivors, with participants increasing their physical activity and improving their physical functioning and HRQOL. Although community-based exercise programs for cancer survivors exist in some areas, they are structured exercise programs in which participants are required to visit a gymlike environment and exercise under supervision. The

A How did you hear about the program?
All identified survivors



B

Source	% enrolled
Harris Health ¹	22.0
Kelsey-Seybold	57.7
Community event	30.5
Phone call	28.6
Support group	67.3
Church/community organization	56.0
MD Anderson/other clinic	60.0
Mass media	66.7
Friend/family	87.5
Other	40.9

¹Harris Health is the safety net health care system for Harris County

Figure 4. Recruitment sources: (A) how survivors reported they heard about the program and (B) percentage of survivors from each recruitment source who enrolled.

TABLE 2. Changes in Program Outcomes for Participants Who Completed Both Baseline and Follow-Up Assessments (n = 126)

	Baseline Assessment, Mean (SD)	12-wk Follow-Up Assessment, Mean (SD)	Mean Change (SD)	t (df)	P ^a
Physical activity					
IPAQ (MVPA), min/wk ^b	172.8 (328.4)	344.6 (386.8)	171.8 (412.2)	4.66 (124)	<.01
Physical functioning					
Distance walked in 6 min, m	427.8 (80.7)	469.9 (98.3)	42.1 (88.2)	5.16 (116)	<.01
Sit-to-stand test ^c	12.5 (4.2)	14.9 (5.2)	2.4 (4.0)	6.55 (118)	<.01
HRQOL					
PROMIS GPH ^d	45.2 (7.8)	47.5 (8.3)	2.4 (5.4)	4.96 (126)	<.01
PROMIS GMH ^d	48.3 (7.7)	49.8 (7.4)	1.6 (5.1)	3.46 (126)	<.01

Abbreviations: GMH, Global Mental Health; GPH, Global Physical Health; HRQOL, health-related quality of life; IPAQ, International Physical Activity Questionnaire; MVPA, moderate to vigorous physical activity; PROMIS, Patient-Reported Outcomes Measurement Information System.

^aA P value of .05 was considered statistically significant.

^bMinutes of MVPA per week truncated at a maximum of 3 hours per day for each intensity level.

^cNumber of sit-to-stand repetitions completed in 30 seconds.

^dPROMIS GMH and GPH subscales (T scores). The population mean was 50.

ALAC program is an innovative approach to increasing activity that promotes home-based exercise and encourages lifestyle changes by setting personalized and achievable goals. This approach is consistent with survivor

preferences¹² and is well suited for survivors who might not yet be ready or committed to attending exercise training multiple times per week. Furthermore, ALAC targets the underserved populations and offers bilingual classes.

TABLE 3. Participant Satisfaction and Program Mastery

		12-wk Assessment, No. (%)
Satisfaction		
Affected physical activity	Less active than before	1 (0.8)
	No change	3 (2.4)
	More active than before	122 (96.8)
	Missing	1
Affected how you feel physically	Worse than before	0 (0)
	No change	10 (8.1)
	Better than before	114 (91.9)
	Missing	3
Affected how you feel emotionally	Worse than before	0 (0)
	No change	21 (16.8)
	Better than before	104 (83.2)
	Missing	2
Would recommend to another survivor	No	0 (0)
	Neutral	3 (2.4)
	Yes	123 (97.6)
	Missing	1
Overall satisfaction	Dissatisfied	1 (0.8)
	Neutral	2 (1.6)
	Satisfied	120 (97.6)
	Missing	4
Program mastery		
No. of survivorship resources identified	0	14 (11.1)
	1	20 (15.9)
	2	65 (51.6)
	3	27 (21.4)
	Missing	1
No. of physical activity benefits identified	0	5 (4.0)
	1	0 (0)
	2	14 (11.1)
	3	74 (58.7)
	4	18 (14.3)
	5	15 (11.9)
No. of behavioral strategies reported	0	9 (7.1)
	1	13 (10.2)
	2	25 (19.7)
	3	33 (26.0)
	4	28 (22.0)
	5	19 (15.0)

Program Delivery Metrics

The 45% enrollment rate is similar to the enrollment rate of FitSteps for Life, which enrolled 42% of cancer survivors who were referred by the program and received an initial assessment.⁸ ALAC's multimodal recruiting strategy achieved outstanding results if we consider that 65% of the participants were minority and/or medically underserved breast cancer survivors. Potential participants were reached through a broad referral network and community outreach. Survivors who heard about the program from support groups, churches and community organizations, or health care providers tended to have high enrollment rates. Although the enrollment percentage is lower for survivors who were identified through the safety-net health care system than other groups, it should

be noted that many of these survivors were contacted proactively as part of efforts to increase the enrollment of underserved survivors rather than because they expressed interest. This is in contrast to people who heard about the program from support groups or community organizations and expressed interest in being contacted. Although a substantial proportion of the participants were African American or Hispanic, attention needs to be paid to the enrollment of Hispanics because they were less likely to enroll when contacted about the program. Future efforts need to focus on participation barriers and increased relationship building with trusted organizations in the Hispanic community. In general, ALAC's reach needs to be expanded. We contacted 427 breast cancer survivors, but approximately 2700 people are diagnosed with breast cancer each year in Harris County, the region's most populous county, so clearly continued efforts to expand its reach are needed. Overall, recruitment efforts require considerable investment and relationships in the community, and programs such as ALAC must rely on multiple partnerships.

Sixty-eight percent of the individuals who enrolled in the program completed the 12-week intervention and final assessment, and 74% completed at least half the sessions. Examples of other community-based programs published in the literature have reported retention rates between 55% and 70%,^{7,24,25} with the FitSteps program reporting very high retention at 12 weeks (86%),⁸ perhaps because of the individualized nature of that program. Attrition is a limitation to the effectiveness and generalizability of ALAC and other community-based programs. The attrition could be related to challenges faced by minority and medically underserved survivors, who represented a large proportion of our participants. Many reported transportation issues, family caregiving duties, time conflicts with work, and cancer recurrence. Providing financial assistance for program-related transportation or offering at-home options for the intervention through virtual platforms or in an on-demand format may be successful strategies for reducing attrition among ALAC participants.

Having a centralized training and evaluation center helped to promote program effectiveness and reach by supporting intervention implementation, sustaining performance standards through health educator monitoring and technical assistance, facilitating community partnerships, and identifying strategies for improving recruitment and retention. One limitation of this evaluation is that we do not report measures of the fidelity of curriculum implementation. Still, the high levels of

program mastery and participant satisfaction indicate the health educators' facility in teaching the curriculum. Future efforts should involve more systematic evaluations of curriculum implementation and the training and support for the implementation partners supporting the project.

Participant Outcomes

The significant changes in participant outcomes and the high levels of program content mastery and satisfaction indicate that the adaptations made to the evidence-based program were successful and did not compromise effectiveness. The change in self-reported MVPA was consistent with the improvements observed in the objective tests of physical functioning. The program provided additional benefits by improving HRQOL; this was consistent with other studies of exercise in cancer survivors.¹ The effects on physical functioning in our study were especially notable because breast cancer survivors develop frailty at an earlier age than women who have not had cancer,²⁶ and this frailty increases the risk of falls, fractures, and subsequent disability and loss of independence.^{27,28} Program benefits were evident in all 3 racial/ethnic groups and in both younger and older participants except for physical functioning tests, on which older women improved less than younger women. However, the improvement in the functional tests was still significant for older women, and they experienced increases in HRQOL and MVPA comparable to younger women, so it appears that older breast cancer survivors benefit from participation in ALAC.

Although there was no comparison group in this evaluation, there were robust increases in the objective tests of physical functioning, improvements in participant-reported HRQOL per validated tools, and participant self-assessments of their improvement. Triangulation of the results with multiple measures increases confidence in the program's benefits. A major strength is our evaluation of an evidence-based intervention that was adapted to meet the needs of a diverse, community-based sample of cancer survivors. The program adaptations, combined with the community partner network, helped to enable the program's success. Our program was facilitated by having funding from the state of Texas, but programs may fail despite funding if the intervention or the implementation strategies are not well suited to the context or if the program does not enroll sufficient participants and keep them engaged. Many barriers exist to successful implementation, such as the training/qualifications of interventionists, participant recruitment, and failing to reach those most in need of programming. This project used

multiple implementation strategies¹⁹ to address these barriers, including developing structured training for community health educators; adapting the evidence-based intervention¹⁷; locating the program at sites convenient to participants²⁹; and leveraging a community-academic partnership and building a network of relationships with community organizations to obtain funding and facilitate implementation. Successful implementation of physical activity programs for cancer survivors must consider not only the intervention evidence base but also the strategies used to implement and sustain the intervention.

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CONFLICT OF INTEREST DISCLOSURES

The authors made no disclosures.

AUTHOR CONTRIBUTIONS

Irene M. Tami-Maury: Conceptualization, data curation and validation, writing—original draft, and writing—review and editing. **Yue Liao:** Formal analysis and visualization, writing—original draft, and writing—review and editing. **Maria L. Rangel:** Data curation and validation, writing—original draft, and writing—review and editing. **Leticia A. Gatus:** Project administration and supervision and writing—review and editing. **Eileen H. Shinn:** Methodology and writing—review and editing. **Ashley Alexander:** Project administration and supervision, resources, and writing—review and editing. **Karen Basen-Engquist:** Conceptualization, data curation and validation, project administration and supervision, methodology, resources, writing—original draft, and writing—review and editing.

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