Perceived versus actual factors associated with adoption and maintenance of an evidence-based physical activity program

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ABSTRACT

The public health burden of arthritis requires the dissemination of evidence-based physical activity (PA) programs for arthritis. This study examined perceived vs. actual factors related to the adoption and maintenance of PA programs and Fit and Strong! Six focus groups ($n=46$) were conducted in two states with potential Fit and Strong! providers. Key informant interviews ($n=18$) were conducted with actual Fit and Strong! providers. Participant interest was a primary motivator for PA program adoption in both focus groups and key informant interviews. Fit and Strong's evidence base was a motivator for adoption among focus group participants. The primary perceived barrier to adopting Fit and Strong! among focus group participants was cost/resource limitations compared to scheduling among key informants. Evidence-based programs need to craft different messages to deal with barriers perceived and experienced by providers engaged in specific stages of the translation process.

KEYWORDS

Physical activity, Older adults, Arthritis, Dissemination

There is a compelling need in the USA at present to disseminate evidence-based health promotion programs for persons with arthritis. In 2005, nearly 48 million people reported a doctor's diagnosis of arthritis; a number that is expected to increase to 67 million by 2030 [1]. Arthritis is the leading cause of disability in adults [2]; by 2030, it is anticipated that 25 million adults will have arthritis-related activity limitations [1]. Individuals with arthritis (27.2 %) are more likely to report fair-to-poor health compared to persons without arthritis (12 %) and those with arthritis-related activity limitations report a greater number of physically and mentally unhealthy days compared to individuals with no arthritis-related activity limitations [3]. Annual costs for treating arthritis increased by \$42 billion dollars between 1997 and 2003 [4]. Importantly, this increase was attributable to both an increase in the prevalence of older adults and of self-reports of physician diagnosed arthritis [4].

Implications

Practice: Improving evidence-based program administrators' understanding of barriers to adoption and maintenance of evidence-based PA programs coupled with problem-solving solutions with community-based organizations can improve the effectiveness and efficiency of the dissemination of evidence-based programs.

Policy: Cost was a significant barrier to both the adoption and maintenance of PA programs and Fit and Strong!, indicating that stable funding for these programs is urgently needed.

Research: Application of the RE-AIM model can advance our understanding of program-related and organizational factors that influence the adoption and maintenance of evidence-based programs using a common language and constructs across investigators.

Osteoarthritis (OA) is the most common form of arthritis. Nearly 27 million adults have OA [5] and there are 632,000 joint replacements and 11.1 million outpatient visits due to OA annually [6]. Approximately one fourth of people with knee OA have difficulty with activities of daily living including walking one fourth of a mile, climbing stairs, and kneeling or stooping [7]. Importantly, comparisons of age-matched peers with and without OA have shown that OA is associated with both *reduced lower extremity (LE) strength and reduced aerobic capacity* [8, 9]. The latter finding indicates that reduced PA associated with LE OA may negatively affect cardiovascular capacity as a possible secondary outcome.

Physical activity (PA) is crucial to the management of OA. It has been shown to decrease pain, improve physical function, and reduce disability in people with arthritis [10]. Accordingly, recent public health initiatives including the National Arthritis Plan and the National Public Health Agenda for Osteoarthritis have emphasized the importance of PA in the treatment and management of arthritis [11, 12]. Likewise, clinical guidelines for the management of hip and knee OA recommend the use of

aerobic, muscle-strengthening, and water-based exercises as non-pharmacological strategies for arthritis management [13, 14].

Ironically however, arthritis is known to be a major barrier to participation in PA. Recent data demonstrated a 53 % disparity gap in self-reported prevalence of no leisure-time PA between adults with and without arthritis [15], with nearly 32 % of adults with arthritis reporting no leisure-time PA. Moreover, a recent study by Dunlop et al. that examined PA using accelerometry data from adults with knee OA found that only 12.9 % of males and 7.7 % of females met aerobic PA guidelines [16]. Together, these data indicate a substantial gap between the number of adults with OA who should be participating in PA versus those that are.

Increasing the availability of evidence-based self-management and PA programs has become a priority for the Centers for Disease Control and Prevention (CDC) [17, 18]. To date, the CDC has identified nine PA programs, including Fit and Strong!, that meet their criteria as “recommended” for improving arthritis-related outcomes [18]. Importantly, part of the criteria used for determining this recommendation included having the “infrastructure and program characteristics needed to facilitate wide-scale dissemination and implementation by public health agencies and their partners” (18 p.1909). While there is no comparable statistic published for attending an evidence-based PA program for arthritis, recent data suggest that only 11 % of adults with arthritis have attended a self-management education class [19], underscoring the need to enhance dissemination of evidence-based programs for people with arthritis.

Fit and Strong! is a multiple-component exercise/lifestyle change program for older adults with OA with demonstrated efficacy and effectiveness [20, 21]. It is a group and facility-based program that meets for 90 min three times per week for 8 weeks (24 sessions in total). Each session consists of 60 min of a multiple-component exercise program (flexibility/balance, aerobic walking and/or low impact aerobics, and LE strength training using elastic exercise bands and adjustable ankle cuff weights) and 30 min of group problem-solving and education using a manual-based curriculum designed to facilitate arthritis symptom management, self-efficacy (SE) for exercise, and commitment to lifestyle change. In week 6, participants meet with instructors to negotiate an individualized PA plan with the goal of maintaining 20 min of flexibility, 20 min of aerobic, and 20 min of resistance training a minimum of three times per week. This plan becomes a PA maintenance contract that each participant signs on the last day of class.

The *efficacy* of Fit and Strong! has been demonstrated in a randomized controlled trial of 215 individuals with OA [20]. Relative to controls, treatment participants improved significantly in SE

for exercise, exercise participation, and LE stiffness after 8 weeks. At 6 months, the participants retained the original gains and had significant benefits vs. controls in SE for exercise adherence, lower extremity pain, and SE for arthritis pain management. At 12 months, significant effects were maintained on SE for exercise and exercise participation, accompanied by marginally significant reductions in LE stiffness and pain. Effect sizes were *0.798 and 0.713* for SE for exercise at 6 and 12 months, respectively, and *0.905 and 0.669* for exercise participation in the treatment group.

The effectiveness of Fit and Strong! has been demonstrated in a trial (N=486) that compared different ways of reinforcing maintenance of PA after conclusion of the 8-week Fit and Strong! program. This study found significantly increased maintenance of PA at 18 months accompanied by significantly improved LE stiffness, pain, and function; LE strength (sit–stand); mobility (6-min distance walk); and anxiety and depression [21]. The impact on gait speed is notable given recent findings that gait speed, along with age and sex, is a strong predictor of survival [22].

Despite the current emphasis on increasing the availability of evidence-based PA programs for people with arthritis [18], little is known about the most effective ways of translating and diffusing these programs. While the scientific evidence-base for the Fit and Strong! program was established through funding received from the National Institute on Health and the National Institute on Aging, our work on translation of the program in North Carolina and Illinois was supported by an R18 grant from the CDC. Our approach to translating and diffusing Fit and Strong! was guided by the literature on the Theory of Diffusion of Innovations [23, 24], dissemination [25], and the RE-AIM framework [26, 27]. We applied diffusion theory by using Area Agencies on Aging (AAAs) and Planning and Service Areas (PSAs) determined by the Older Americans Act as the societal sector within which we sought to produce change. Every state in the USA has a state unit on aging and multiple areas on aging that each cover a PSA as defined in the act. Together, the state unit and the AAAs are referred to as the aging network. Working with this societal sector to translate and diffuse Fit and Strong! made sense because the existing aging network is already responsible for serving a disease prevention/health promotion function through Title IIID of the act. We worked with AAAs in two states, Illinois (IL) and North Carolina (NC). Staff within those AAAs helped us to identify and recruit aging services providers (senior centers, medical centers and parks, and recreation organizations) within each PSA that were prime targets to adopt and implement Fit and Strong!

We also applied the work of Bradley et al. (2004) who found that successful translation of evidence-based programming depends on several organizational factors: strong support of senior management,

availability of credible supportive data indicating efficacy of the program, an infrastructure that can support implementation and maintenance of the program, whether the organizational culture needs to be changed to accommodate the program, and the amount of coordination needed across departments within an organization [30].

The RE-AIM model [26] guided the conduct and evaluation of the overall study. The RE-AIM model assesses five dimensions—reach, efficacy, adoption, implementation, and maintenance—that can operate at the individual and clinic, organization, or community level and interact to determine the public health or population-based impact of a program or policy. The present study focused on the dimensions of adoption and maintenance at the organizational level. Adoption refers to the proportion and representativeness of settings that adopt a given program, and maintenance is defined as long-term practice of a behavior at the individual level and as institutionalization of the program at the organizational or policy level. Specifically, two of the study aims were to: (1) describe the characteristics of exercise programs that organizations look for when deciding to offer exercise programs in general and the specific characteristics of the Fit and Strong! program that make it an appealing program to disseminate and (2) describe perceived and actual factors influencing adoption and maintenance of the program by key stakeholders and decision makers who represent organizations where Fit and Strong! might be offered.

METHODS

Two qualitative methods were used in this study. First, focus groups were conducted with stakeholders and decision makers from organizations representing *potential providers* of Fit and Strong! These were followed by in-depth interviews with key informants at organizations that actually adopted and implemented Fit and Strong!

The study was approved by the Institutional Review Board at the University of Illinois at Chicago. Procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000. Focus group participants signed an informed consent prior to participation and individuals who participated in the in-depth interviews were provided with information about the study and gave verbal consent prior to participation.

Recruitment

Focus group participants were key stakeholders and decision makers from organizations representative of community-based organizations that would be appropriate settings to offer Fit and Strong! but had not yet offered it. Participants were recruited

through area agencies on aging and referrals from providers. The majority of those invited enrolled in focus groups. Representatives from six of the organizations that participated in focus groups subsequently implemented the program and completed key informant interviews. Seven AAA regions across Illinois and North Carolina were targeted for key informant interview participation. Key informants were directors or program managers of sites that adopted Fit and Strong!

Moderator guides

Moderator guides for the focus groups and the in-depth interviews were developed by experts in public health from the University of Illinois at Chicago. Questions on the moderator guide utilized open-ended questions to understand factors pertaining to the adoption and maintenance of Fit and Strong! The moderator guides for the focus groups and key informant interviews both included questions about the decision making process for the adoption and maintenance of PA programs and the barriers and facilitators to the adoption and maintenance of Fit and Strong! specifically. The key distinction between the moderator guides was that the focus group guide examined the *perceived or anticipated* barriers and facilitators to the adoption and maintenance of Fit and Strong!, whereas the key informant interview guide focused on the *actual* barriers and facilitators experienced by providers who had adopted and implemented Fit and Strong! Questions used in the moderator guides can be found in Table 1.

Both guides were critically reviewed by two separate expert panels prior to their use. The first panel consisted of researchers who are experts in the areas of physical activity, public health, and translation and dissemination science. The second panel consisted of expert aging services providers. These panels were utilized to ensure that the moderator guides captured critical aspects of the translation and dissemination process, ensured appropriate application of the RE-AIM model, and perhaps most importantly, asked questions in a way that would be understood by practitioners and provide meaningful responses for public health practice.

Focus group procedures

Focus groups, stratified by urban/suburban ($n=3$) versus rural location ($n=3$), were held in each state (NC=2; IL=4). The groups were facilitated by individuals with experience moderating focus groups, and a standard moderator's guide was used to lead the discussions. Focus group discussions lasted 60–90 min. Five of six focus groups were audio-taped and transcribed verbatim; notes taken by staff during the sixth focus group were used as the data source due to a technological glitch with the audio-recording. Transcripts were verified for accuracy prior to data analysis.

Table 1 | Samples of questions used to assess adoption, implementation and maintenance in focus group versus key informant guides

RE-AIM element	Focus group guide questions (contemplators)	Key informant interview guide questions (actual providers)
Adoption	1. How does your organization decide which exercise programs to offer?	1. How does your organization decide which exercise programs to offer?
	2. What characteristics of Fit and Strong! appeal to your organization and which make you hesitant to adopt it?	2. What characteristics of Fit and Strong! appealed to your organization when you made the decision to offer the program?
	3. What barriers to adopting Fit and Strong! do you think your organization would encounter?	3. Was there anything about Fit & Strong! that made you hesitant to offer it?
	4. What would facilitate the adoption of Fit and Strong! by your organization?	4. Did your organization encounter any barriers to offering Fit and Strong!?
		5. What factors facilitated the offering of Fit & Strong by your organization? Or, what factors within your organization helped promote the program?
Implementation	1. You have some understanding of Fit and Strong!* Knowing what you do about the program, what resources will be needed to implement Fit and Strong!	1. What resources did you need to implement Fit & Strong?
	2. What would you anticipate to be your costs for implementing the Fit and Strong! program?	
Maintenance	1. How do you determine whether or not to continue a program?	1. How do you determine whether or not to continue a program?
	2. What factors other than cost would influence your decision to continue offering a program?	2. Do you plan to continue offering Fit and Strong!? Or, do you plan to offer another session of Fit and Strong!?
	3. What costs would your organization anticipate incurring to keep Fit and Strong! continually going?	3. What costs are associated with keeping programs up and running?

Focus group data analysis

Qualitative analysis of the focus group data used a modified grounded theory approach. Consistent with grounded theory, a constant comparison method was used resulting in the creation of units or themes of information [28, 29]. Two researchers trained in qualitative research methods individually read all transcripts and generated an initial codebook that was subsequently used to code each focus group. The development of the codebook was an iterative process; new codes were discussed and added as necessary. Each focus group transcript was analyzed line-by-line to create units of information that were compared to previously identified units. This selection and comparison of units allows for the theoretical properties of the category to emerge [28, 29]. The number of focus groups that identified a theme was used as an indicator of the relative importance of a theme.

Key informant interview procedures

Key informant interviews were conducted via telephone with providers at sites that adopted Fit and Strong! The interviews occurred after completion of the first iteration of Fit and Strong! and were

digitally recorded with respondents' permission. Interviews were approximately 1 h in length and conducted by one or two study team members. Study team members used the interview guide described above (see Table 1) and took notes for each item during each interview.

Key informant interview data analysis

Study team members entered interview notes and/or listened to audio digital files and entered notes into Excel. A pair of study staff then examined interview content and selected common themes across interviews for items related to adoption and maintenance and ranked the items in terms of frequency of identification across respondents. The relative importance of the theme was determined by the number of discrete key informant interviews in which it was mentioned.

RESULTS

Focus group results

Four focus groups were conducted with 31 individuals in IL, and two focus groups were conducted with 15 individuals in NC. A total of 6 males and 25

females participated in the IL focus groups, and 2 males and 13 females participated in the NC focus groups. The majority of participants in the focus groups represented senior centers. Other organizations represented included medical centers, long-term care, senior service organizations, parks and recreation facilities, and fitness centers including the YMCA.

Perceived factors influencing adoption of physical activity programs

Potential providers of Fit and Strong! expressed two main themes regarding how organizations made the decision to adopt a PA program: (1) need for the program and (2) assessment of what other providers are offering. Need was mentioned in all of the focus groups and was primarily assessed through participant interest in having the program. Many focus group participants described conducting needs assessment surveys with the clientele they serve to identify programs desired and needed. Others described relying on participant feedback to assess need, and some described using advisory boards to help determine the client needs. For example, a provider in NC described its efforts to identify participant interest this way, “We get it from both sides. We survey the members, and I have a team that—we assess and pay attention to what the membership base is interested in.” Related to need, participants in half of the focus groups described modeling what others were doing. This concept was described as surveying what programs other organizations were offering to their clientele and, in some instances, going to observe the programs to see if they align with the needs of the clientele. For example, one stated, “We go to some of the classes to see if we think our seniors can do it. We know them pretty well and we know what their limitations are, and if we think its something they can do, or we can adapt for them, we’ll decide on that.” Financial funding also was identified as a determinant of the decision to adopt in one provider group. In this same group, how the program was marketed was also important. Staff at that provider organization needed to understand how the program was better than what they currently offered before making a decision to adopt.

Specific characteristics of Fit and Strong! influencing adoption

With respect to specific Fit and Strong! characteristics that were perceived as appealing by potential providers, the main theme that emerged from the participants in three focus groups was the fact that the program was evidence-based with demonstrated effectiveness. One provider from IL described the importance of providing an evidence-based program as, “...to offer to the seniors in the community a program that actually is evidence-based and shows that, most likely, you will have improvement after

you finish this...So eight weeks to work really hard that we’ll get good results from. I think—it’s a wonderful thing to offer.” Other aspects of Fit and Strong! that were appealing pertained to the structure of the program including the fact that it is offered three times a week and is manualized.

Perceived barriers to the adoption of Fit and Strong!

Salient perceived barriers to adopting Fit and Strong! reported in all focus groups primarily involved resource limitations including costs associated with offering the program, space and time constraints, availability of qualified exercise instructors to lead the program, and availability of exercise equipment. The most commonly mentioned barrier across all six groups were costs related to the program including the expenses associated with using certified exercise instructors and costs associated with the exercise equipment (ankle weights and resistance bands) used in the program. One provider from IL stated, “our cost is probably a concern just simply because—again, our manager is pretty good about saying let’s offer something; just don’t lose any money off of it. You know, if we don’t make any money, that’s fine; just cover the cost. So paying an instructor would be that.” Space and time were two related barriers mentioned in the majority of focus groups. Most described the presence of other programs as limiting the time and space available to offer the program. The fact that Fit and Strong! is offered three times per week for 90 min a session accentuated their concerns regarding time and space. For example, a provider stated, “We are not that small but we have so many different programs going on, and for this to be three times per week, an hour and a half long, I would have to do some rearranging or cancelling some stuff.” The availability of certified exercise instructors was expressed as a potential barrier in all six focus groups but was of particular concern in focus groups conducted with providers from more rural areas. Many rural focus group participants were accustomed to using volunteers to deliver their exercise programs and were concerned about not only the availability of exercise instructors but with the potential cost implications. In a few of the focus groups, obtaining ankle weight cuffs was perceived as a potential barrier to adoption.

Perceived resources needed to implement Fit and Strong!

In response to a question about what resources providers thought they would need in order to implement Fit and Strong!, provider responses focused on financial resources including cost and space and certified exercise instructors. Space was an issue for several of the providers but not for all. Likewise, providers expressed concern over their ability to locate qualified, affordable, certified exercise instructors to deliver the program. Interestingly, the providers identified several solutions to this

potential problem including partnering with community colleges, YMCAs, medical organizations, and even finding retired PE teachers who could become certified. The costs associated with purchasing the exercise equipment was brought up as consideration for implementation, but the providers described many ways to circumvent this cost including having people bring their own weights or looking for donations.

Perceived factors influencing the sustainability of Fit and Strong!

Participants in five of six focus groups suggested that level of client participation in the program is a key factor in the decision to sustain a program. For example, one IL provider stated, "Participation is certain....And I think what we have found, too, is if a program is really beneficial, the attendance, the numbers will be there to support the program. And sometimes, programs start out very popular and then the interest wanes. And when the interest wanes, I think we'll look at the program and say should we modify it or is it time to go a different direction?" Another provider stated, "Well, for us it would be whether we're getting the people participating. And, if we don't see that we're making progress there, then we probably wouldn't continue it." Other factors that were mentioned as influencing the decision to keep a program going were costs of running the program and the availability of funding or external resources to keep the program. Participants in one group also discussed the importance of continued support and training. Perceived costs associated with sustaining Fit and Strong! included the costs of maintaining the exercise equipment and paying the certified exercise instructors.

Key informant results

We conducted a total of 18 key informant interviews. Seven interviews were conducted with sites in NC, and 11 with sites in IL. Five key informant interviews were from rural sites, and 13 interviews were from urban/ suburban sites. The providers interviewed represented parks and recreation facilities ($n=7$), senior centers ($n=7$), and medical centers ($n=5$) and the YMCA ($n=1$). Six of the 18 key

informants had previously participated in the focus groups.

Factors influencing adoption and maintenance of physical activity programs

Table 2 shows factors commonly identified by key informants as influencing the decision to adopt or maintain PA programs. Participant interest was the most frequently identified factor associated with program adoption, followed by program safety/ effectiveness, program's evidence-base, program cost, and program appeal to multiple users. In contrast, the most frequently identified factor associated with maintenance was participant enrollment/ attendance, followed by participant's interest, improvement in participant outcomes, participant feedback, program cost, instructor availability, and instructor feedback.

Factors facilitating adoption of Fit and Strong!

When asked if certain characteristics of Fit and Strong! positively influenced their decision to adopt the program, the most commonly mentioned attribute was the focus of the program on arthritis and older adults, followed in descending order by its structured class format, evidence base, and formal instructor training. Less commonly mentioned facilitators were the fact that funds were provided to offset cost of implementation, the ongoing research associated with the program, and support received from the Fit and Strong! team. Some sites had the space and some of the equipment already available which helped them offer the program. The availability of advertisement templates and recruitment information provided by the Fit and Strong! team also facilitated offering the program.

Barriers to adoption of Fit and Strong!

Providers had few initial concerns that made them hesitant to offer the program. They reported cost of purchasing equipment as their primary concern, followed by scheduling the program and its formal regimen, ability to enroll enough participants, use of ankle weights, and program structure as factors which made them initially hesitant to offer the

Table 2 | Most frequently identified factors associated with program adoption and maintenance of PA programs by key informants ($N=18$)

Adoption	Maintenance
Participant interest and demand for program (6)	Enrollment/attendance (10)
Program is safe and effective for older adults (6)	Participant interest (7)
Program is evidence-based (6)	Participant improvement/outcomes (5)
Program cost (4)	Participant feedback/evaluation (5)
Having well-rounded programming, that appeals to multiple user groups (4)	Program cost (5)
	Instructor availability/retention (4)
	Instructor feedback (3)

The number in parenthesis reflects the number of key informant interviews in which the issue was identified

program. Providers reported few barriers to offering the program. The two specific barriers to adoption that were reported were scheduling/space constraints followed by recruiting enough participants to support the program. However, neither the concerns nor barriers reported prevented sites from actually implementing the program.

Factors facilitating maintenance of Fit and Strong!

All but one site (17/18=94 %) planned to continue offering Fit and Strong! after the first iteration ended. Several sites reported that the support received by study team members was helpful, including response to questions received by team members and fidelity check site visits. Providers thought that Fit and Strong!'s association with the University of Illinois at Chicago added credibility to the program. Providers said that receiving marketing support and information regarding implementation was also beneficial. They also thought that feedback received from surveys helped promote program maintenance. All providers thought that collaborating with other organizations, such as AAAs or Arthritis Foundation (AF) chapters, positively influenced program continuation.

Overall, providers reported having a very positive experience offering Fit and Strong!. Selected quotations are provided below.

“The people who took the first session are quite interested in coming back to continue the exercises and participate in the next session.”

“It’s been really successful.”

“People were asking to register even before the catalogue came out.”

Comparison of focus group and key informant responses

Factors associated with adoption

Table 3 compares factors associated with the adoption of PA programs identified by the focus group participants versus key informants. Both focus group participants and key informants most commonly identified participant interest/need as a determinant of program adoption. Focus group participants emphasized the importance of understanding what programs were offered by other institutions while key informants more commonly mentioned the importance of evidence-based programming and programs that are safe and effective for older adults. Costs were also a consideration in the key informant interviews.

Comparison of perceived vs. actual facilitators and barriers specific to adopting Fit and Strong!

Table 3 shows that the most frequently identified perceived facilitators were the fact that the program was evidence-based, manualized, and had a structured format. The most commonly identified actual facilitators were the packaged curriculum, space and equipment, and availability of instructor training. Perceived barriers were resource limitations/cost, space/time, availability of certified exercise instructors, and obtaining ankle cuff weights. In contrast, actual barriers were scheduling/space constraints, followed by participant recruitment.

DISCUSSION

Consistent with the work of Bradley et al., the key *perceived* factors associated with the decision to adopt

Table 3 | A comparison of the most frequently identified factors associated with the adoption of physical activity programs and Fit and Strong!

Physical activity programs	
Focus group results	Key informant results
Participant interest/need (6)	Participant interest and demand for program (6)
Modeling what other organizations are doing (3)	Program safe and effective for older adults (6)
	Program is evidence-based (6)
	Program cost (4)
	Having well-rounded programming that appeals to multiple user groups (4)
Fit and Strong!	
Perceived facilitators (focus groups)	Actual facilitators (key informant interviews)
Evidence-based (3)	Packaged curriculum (4)
Manualized (3)	Space and equipment (3)
Structured format (2)	Availability of training (3)
Perceived barriers (focus groups)	Actual barriers (key informant interviews)
Resource limitations/cost (6)	Scheduling/ space constraints (4)
Space/time (4)	Participant recruitment (4)
Availability of certified exercise instructors (6)	
Obtaining ankle cuff weights (3)	

The number in parenthesis reflects the number of focus groups or the number of key interviews in which the issue was identified

Fit and Strong! were its evidence base with demonstrated effectiveness, the fact that it is manualized, and its structure. The level of program participation and cost were the primary perceived factors associated with maintenance of the program. Key informant interviews suggested that the actual factors associated with adopting Fit and Strong! were its focus on arthritis and older adults, structured class format, evidence base, and formal instructor training. Actual factors associated with maintenance were related to support received in recruiting and implementing the program including response to questions provided by the Fit and Strong! team, the provision of fidelity check site visits, association with the university, marketing support, implementation information provided, and collaboration with other organizations such as AAAs or local AF chapters.

Lessons learned

Findings from our study suggest that participant's interest or need for a PA program and the evidence base for the effectiveness of the program facilitate an organization's decision to adopt physical activity programs. In contrast, Brownson and colleagues (2007) found that the most important influence on the decision making process in adopting evidence-based PA programs is the availability of resources [31]. One reason for this discrepant finding might be our use of open-ended questions. It is plausible that decision makers first consider whether the program is suitable for their clientele before they examine resource limitations.

A recent analysis performed by the Active for Life study of the sustainability of two evidence-based PA programs found that consistent financial support was the primary factor influencing sustainability, while lack of program 'fit' with the mission of the organization was a second barrier to sustainability [32]. In contrast, we found that program cost was listed as the fifth most influential factor for sustainability within our provider population. The difference in our findings may reflect the fact that all providers in this study received a modest cash incentive to at least partially offset the costs of the initial offering of the program. The providers interviewed, in general, were enthusiastic about the niche that Fit & Strong! fulfilled within the organization, with several stating that the "unique" nature of Fit and Strong! was one of its most appealing attributes. Cost is likely to always be a factor that impacts program adoption and maintenance. Especially in these trying economic times, most providers need help from stable public funding sources like the Administration on Aging or the Centers for Medicare and Medicaid Services. However, it is interesting to note that the influence of cost may diminish slightly when the program fulfills an organizational need and is well populated by a target population.

Site readiness and capacity are also important to consider in translation efforts. The types of sites that succeeded in adopting and maintaining Fit and Strong!, in this study, included large senior centers, medical centers, parks and recreation facilities, and Ys. These sites have the capacity to implement the program in terms of space, instructors, and equipment. Sites that prioritize PA programming and whose mission closely matches the objectives of Fit and Strong! were also more likely to adopt the program, consistent with the theory on translation advanced by Bradley et al. [30].

This study provided us with a critically important opportunity to examine the translation and diffusion of Fit and Strong! in two states. Findings showed that community-based organizations are very interested in adopting and maintaining evidence-based programs such as Fit and Strong! This study had some limitations. The number of states included in the study was small and the number of sites did not permit sophisticated analysis. However, this is the first step in a long, ongoing process to disseminate the program in multiple states with a larger set of providers. We have found lessons learned from this study to be helpful in enabling us to streamline and improve the processes that we now use to disseminate Fit and Strong!, and we hope that these lessons will also be useful to the growing discipline of translation research.

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