

Volunteer Delivery of a Community-Based Strength Training Program: Comparison of Adopting and Nonadopting Extension Educator Perspectives

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Volunteer leaders are increasingly being utilized to deliver community strength training classes, but the factors affecting adoption of volunteer delivery approaches by educators or program managers have not been well explored. This study sought to identify these factors by comparing perspectives of adopting and nonadopting county Extension educators for a group strength training program delivered through county Cooperative Extension offices. Semistructured interviews were conducted with a purposive sample of adopting (n=6) and nonadopting (n=13) educators. Interviews were recorded, transcribed verbatim, and coded using thematic content analysis. Review of codes related to adoption or nonadoption of volunteer delivery approaches produced common themes. Both groups acknowledged role differences between educators and volunteers and expressed concerns about maintaining program quality. Adopters expressed greater comfort with volunteer-led program approaches and understanding of the educator-volunteer role. Nonadopters were hesitant to request program participants serve as leaders but felt participants were capable. Both groups were motivated to offer the program for dual personal and community benefit, but nonadopters expressed reliance on the program to maintain physical activity habits and for social support. Findings can inform others seeking to adapt community programs for volunteer delivery or engage volunteers in existing program delivery.

Keywords: volunteers, fitness, strength training, health, wellness, community-based program, physical activity, volunteer leader, rural

Introduction

Rural Americans have lower rates of moderate-to-vigorous physical activity, higher rates of overweight, obesity, and chronic diseases, and tend to be older and poorer than their urban

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counterparts (Fan, Wen, & Kowaleski-Jones, 2014; Jones, Parker, Ahearn, Mishra, & Variyam, 2009). The positive health impacts of regular physical activity, including strength training, are well documented, particularly for older adults (Nelson et al., 2007). Strength training is associated with fall prevention (Braith & Stewart, 2006), chronic disease management (Beniamini, Rubenstein, Faigenbaum, Lichtenstein, & Crim, 1999; Castenada et al., 2002; Cuff et al., 2003; Kelley & Kelley, 2000; Warburton, Gledhill, & Quinney, 2001; Williams et al., 2007), and reduced rates of disability (Baker et al., 2001; Beniamini et al., 1999; Castenada et al., 2002; Layne & Nelson, 1999; Nelson et al., 1994). However, only 13% of older adults report regularly engaging in strengthening activities (Schoenborn & Heyman, 2009).

Access to structured physical activity opportunities, including fitness facilities and classes, is limited for the 15% of Americans residing in rural areas (U.S. Department of Agriculture, Economic Research Service, 2014). Geographic proximity and travel time to exercise facilities have been identified as barriers to physical activity (Schutzer & Graves, 2004). For very rural states, strategies to address such barriers are important to increase physical activity levels among this underserved population.

Peer or lay leadership of strength training programs is a promising approach to increase access, particularly in rural areas. Lay leaders have delivered health education program content for decades (Lewin et al., 2005; U.S. Department of Health and Human Services, 2007). Program sustainability can be enhanced when lay leaders are volunteers. Many nonprofit organizations, including those aiming to improve health, rely on volunteers to implement programs and provide services (Brudney, 2010; Graff, 2006; Jamison, 2003; Kreutzer & Jager, 2011; Manetti, Bellucci, Como, & Bagnoli, 2015; Wisner, Stringfellow, Youngdahl, & Parker, 2005). Use of volunteers may help to bridge the gap between high need for and limited availability of community-based programs, such as strength training classes, in rural, underserved areas (Plotnikoff & Karunamuni, 2011; Smith et al., 2012).

Numerous studies have explored volunteer delivery of health programs (Batik, Phelan, Walwick, Wang, & LoGerfo, 2008), especially for chronic disease self-management (Lorig et al., 1986; Lorig, Mazonson, & Holman, 1993; Lorig, Ritter, Laurent, & Fries, 2004) and fall prevention (Healy et al., 2008; Peel & Warburton, 2009; Robertson, Hale, Waters, Hale, & Andrew, 2014), and a few studies have examined volunteer-delivered strength training programs (Buman et al., 2011; Dorgo, King, Bader, & Limon, 2013; Layne et al., 2008; Robertson et al., 2014; Werner, Teufel, & Brown, 2014; Yan, Wilber, Aguirre, & Trejo, 2009). The need for volunteer-led programs to sustain interventions is documented (Turner, Kennedy, Kendall, & Muenchberger, 2014). However, factors affecting adoption of such delivery models, or factors influencing transition of programs initiated by educators and later sustained by lay volunteers in real-world settings, has not been well explored (Healy et al., 2008). The purpose of this study was to explore perspectives of Extension educators on volunteer leadership of StrongWomen, a

community-based strength training program delivered through county Extension offices in Arkansas, where 42% of the population resides in rural areas (University of Arkansas System Division of Agriculture, 2015).

Program Background

The StrongWomen program is an evidence-based strength training program for midlife and older women developed by researchers at Tufts University that was designed to be community-based and implemented through non-profit organizations and settings by trained StrongWomen program leaders. Program details, dissemination, and results have been described elsewhere (Seguin, Economos, et al., 2008; Seguin, Kuder, Heidkamp-Young, & Nelson, 2012; Seguin, Palombo, et al., 2008). The program is most widely delivered through state Cooperative Extension Services, part of the land-grant university system operating under auspices of the National Institute of Food and Agriculture, United States Department of Agriculture. Extension has traditionally relied heavily on volunteer engagement in many programs (Cassill, Culp, Hettmansperger, Stillwell, & Sublett, 2012).

The Arkansas StrongWomen program is offered through the University of Arkansas Cooperative Extension Service. County Extension offices in each county seat have base staff including a County Extension Agent-Family & Consumer Sciences (hereafter referred to as educator). Educators have responsibilities for programming in several subject-matter areas; StrongWomen is one of the health and aging programs educators may choose to offer. In states where the program is offered through Cooperative Extension Services, most strength training groups are led by educators only. A few states have utilized volunteers, but none to the extent of Arkansas, which adopted volunteer delivery as a core program component.

StrongWomen consists of hour-long strength training sessions held twice weekly over twelve weeks. Individual sessions include a warm-up, eight to ten strengthening exercises and a cool-down and stretch (Nelson & Seguin, 2005). Arkansas' classes meet in various program sites, most commonly community centers, churches, and meeting rooms located in county Extension offices.

The program was instructed by county educators when adopted as a statewide Extension program in 2006; four early adopting counties implemented the program starting in 2003 prior to statewide adoption. Early adopting counties began piloting volunteer leadership of strength training groups in 2006 as a strategy to ensure sustainability and extend access to participants following the initial twelve-week period when the twice-weekly classes were led by the educator. Consistent with StrongWomen program protocols, volunteer leaders were trained by StrongWomen Ambassadors using the same standardized format and materials as used for educator training (Seguin, Economos, et al., 2008).

Viability of the volunteer delivery approach was apparent from pilot experiences. Volunteer delivery of the program, following initial instruction of strength training groups by county educators, was adopted as a core state program component in 2008. The transition of a StrongWomen group to volunteer leadership is dependent upon recruitment of volunteer leaders from among program participants by the educator. When volunteer leaders cannot be recruited or are not recruited, the program cannot transition to volunteer leadership, and one of two outcomes occurs: 1) the program continues to be instructed by the educator, or 2) the program ceases. Details of the volunteer delivery program structure have been published elsewhere (Washburn, Cornell, Phillips, Felix, & Traywick, 2014).

Two years after adoption of the volunteer leader approach, program data indicated unequal adoption of the model. Of 37 counties with active StrongWomen programs, 40.5% had groups led by volunteer leaders, 16.2% had groups jointly led by the educator and volunteer leaders, and 43.2% had groups led by the educator only. Previous study did not show a statistically significant relationship between adoption of the volunteer delivery model and county characteristics (poverty, minority population, rurality, percent of residents over 45 years of age, adult obesity levels) or educator characteristics (age, ethnicity, years of service) (Washburn et al., 2014). The need for further study to identify factors beyond county and educator characteristics was apparent and prompted the study described here. This paper describes educator attitudes and beliefs identified through face-to-face interviews that affected adoption of the volunteer delivery approach for the StrongWomen strength training program.

Methods

Sampling

Arkansas counties were assigned to one of four categories based on StrongWomen program implementation data as of August 2010: 1) program active and volunteer-led; 2) program active and not volunteer-led; 3) program inactive with trained volunteer leaders in county; and 4) program inactive with no trained volunteer leaders in county. Counties not implementing the program ($n = 21$) were excluded from the sample. Purposive homogeneous sampling was employed (Onwuegbuzie & Leech, 2007). Extension educators were identified for interview based upon their implementation of the StrongWomen Program and presence or absence of trained volunteer leaders in their counties.

Educators who had implemented the program but not transitioned to volunteer leadership (nonadopting educators, or NEs) were invited by email to participate in semistructured interviews. All educators in this group who responded to email invitations were interviewed. To ensure equal geographic representation, nonresponding educators in underrepresented areas of the state were contacted a second time. In all but one case, educators agreed to be interviewed

upon second contact. Educators who had implemented the program and transitioned to volunteer leadership (adopting educators, or AEs) were also invited by email to participate in interviews. In this group, invitations were extended to seven educators who were recommended by state Extension administrators to ensure a range of implementation experiences and equal geographic representation. One educator did not respond to invitations. Interviews were conducted until saturation was reached and no new information emerged from the data.

A description of the sampling frame used for interviews and breakdown of those interviewed/not interviewed within each category is described below. Table 1 reflects initial and adjusted sampling frame figures to account for educator vacancies, relocations, and newly hired educators.

Table 1. Educator Interview Sample by Program Status

Sample by county unit	Program active, not volunteer-led	Program active, volunteer-led	Program inactive, trained volunteer leaders	Program inactive, no trained volunteer leaders	TOTALS	TOTALS, excluded sample removed
<i>Total sample</i>	16	21	5	12	54	37
Interviewed	10 (63%)	6 (29%)	0 (0%)	3 (25%)	18 (33%)	19 (51%)
Excluded†	3 (19%)	7 (33%)	2 (40%)	5 (42%)	17 (32%)	--
Not interviewed	3 (19%)	8 (38%)	3 (60%)	4 (33%)	19 (35%)	18 (49%)

†Exclusion criteria: educator position vacancy ($n = 5$), educator relocation to another county ($n = 5$), educator hired after implementation and not involved in program initiation ($n = 3$), educator had limited involvement in initiating program (e.g., program led by interns) ($n = 3$). County of investigator also excluded ($n = 1$). There are 75 counties in Arkansas.

Data Collection

Semistructured interviews were conducted with two groups of educators, both of which had implemented the StrongWomen Program. One group of educators had StrongWomen programs that had transitioned to instruction by volunteer lay leaders ($n = 6$); the other group of educators had not transitioned programs from instruction by the educator to instruction by a volunteer leader ($n = 13$).

Interviews were conducted between August 2010 and October 2011. Interview guides were developed based on program implementation experiences and information gaps identified by a previously conducted survey of educators and were informed by Diffusion of Innovations Theory (Rogers, 2003). The guides were reviewed by an expert panel and modified based on feedback. Interviews occurred at the county Extension office where each educator was housed. The time

required for each interview varied from 25 minutes to one hour depending upon the need for additional probing questions and the depth of educator responses. Interviews were digitally recorded with the interviewee's permission and transcribed in their entirety.

Educators with volunteer leaders were asked about experiences with the StrongWomen Program, what they liked and disliked about the program, and implementation challenges. They were also asked about their volunteer leaders, motivation to have the program led by volunteers, and challenges using volunteer leaders. Educators without volunteer leaders were also asked about their experiences, likes and dislikes, and challenges. In addition, they were asked about current and past participants in StrongWomen classes and their leadership skills and capabilities as potential program volunteers. The study protocol was approved by the University of Arkansas for Medical Sciences Institutional Review Board.

Data Analysis

Data were coded using open and axial coding and analyzed using thematic content analysis (Crabtree & Miller, 1999). An initial codebook was created based upon interview questions. Throughout the coding process, codes were defined and new codes added as needed to capture essential information. Codes were clustered into conceptual categories (Streubert & Carpenter, 2010). To assess reliability and establish intercoder agreement, three independent coders coded 10% of the interview transcripts to identify thematic patterns and codes. Reliability was assessed by comparing the results of the three coders for identical transcripts. Intercoder agreement was calculated at 79%. Validation strategies included member checking and triangulation (Creswell, 2013). Preliminary analyses were presented to interviewees to confirm accuracy of interpretation. Additional interviews and site visits were conducted with StrongWomen volunteers in counties of the adopting educators interviewed as part of a larger study exploring barriers and facilitators to adoption of the volunteer delivery model (Washburn, Cornell, Traywick, Felix, & Phillips, 2015). Comparisons were made between the two groups' interview responses to identify attitudes, feelings, and beliefs that may have affected adoption of the volunteer lay delivery model.

Results

Educators ranged in age from 26 to 60 years old. Eighteen females (15 Caucasian, 3 African-American) and one male (Caucasian) were interviewed. Years of service with the Cooperative Extension Service ranged from 3 to 38 years. StrongWomen Program experience varied widely. One county implemented the program two years prior to the study, while another started its first program seven years prior, before StrongWomen was adopted as a statewide Extension program.

Two primary themes emerged from analyses of educator interviews that shed light on the attitudes and beliefs that may affect adoption of the volunteer lay delivery approach. Differences existed between the two educator groups – those who had transitioned strength training groups to volunteer leadership (adopting educators, or AEs) and those who had not (nonadopting educators, or NEs) – in comfort with and acceptability of volunteer leader use in the program and motivations for transitioning groups to volunteer leadership versus continuing to instruct the group for personal reasons. Each primary theme and related subthemes are described below.

Comfort with Volunteer Delivery Approach

Views on use of volunteer leaders in the program differed between educator groups. AEs indicated few issues with the volunteer delivery approach. One AE offered this example of her comfort with assertiveness of a volunteer leader following training: “The word is that she straightened [the group] out on some things...telling them they weren’t doing it quite right. I thought that was kind of fun.” In contrast, NEs indicated participants were unwilling to lead because of personal characteristics and other obligations. However, nearly all NEs said they had participants capable and competent to lead the class and that participants have filled in as instructor when the educator was absent. Within their comments were indications that participants had not been asked or invited to volunteer and that educators had made assumptions about participant unwillingness. For example, one NE said, “I had no problem with one volunteering, but on a regular basis, I don’t see that person doing it on a regular basis. It’s just not the kind of person she is.” Another NE offered this assumption about participants leading the group: “I really don’t think they’re motivated to do that. But I don’t know.”

Educator-volunteer leader role differences. Educators acknowledged the role differences between themselves and volunteer leaders. One AE said, “I think [participants] may be a little more relaxed with her. She used to be in a class with them, and also she’s been with them for so long now.” One AE conveyed the importance of allowing volunteers to make the program their own: “I think every teacher teaches differently... I think we have to allow for them to be individuals, too. No one can dictate to any of us how our teaching styles are going to be. We give them the basics and then they go from there.” One AE acknowledged upfront that others may be better at leading exercise than she, which made her more comfortable in using the volunteer delivery approach: “I started at the beginning because the [volunteers leaders] were willing to do it, and I knew that some of these people had more skill in leading exercises than I.” However, some AEs reported they struggled with the group transition to volunteer leadership:

It was really hard. When they came back from the training, they were just so excited about it and I thought, “Well this is good. We’ve done good.” And then I started thinking, “Maybe I wasn’t teaching the exercises properly.” But it all worked out fine. It made me feel inadequate at first because they were so good at it.

Volunteer leadership concerns. While AEs described advantages of the volunteer delivery approach, even while acknowledging differences between their instruction and that of volunteers, they still had concerns about certain aspects of volunteer leadership. AEs identified several challenges, including maintaining program fidelity, getting volunteers trained, helping the group to progress, helping volunteers to understand their role, and communication. One AE said a challenge is "...being sure they're doing things correctly and keeping it within a time frame." Many AEs said they were more structured as instructors and perceived themselves to be more aware of the nuances of exercise form and mechanics than are volunteer leaders.

Another AE described communication issues encountered with volunteer-delivered programs:

Every time you get away from home base, so to speak, things change a little. And by that I mean they may not do things quite the same way. They may miscommunicate sometimes between me and them and them and the next person. Not on purpose or anything, but I know sometimes when I go by they might not quite be doing something exactly the way I would've done it.

Some NEs seemed to be reluctant to ask participants to take on the volunteer role. When speaking of potential volunteers, one NE described a couple of people who she thinks "would not mind" instructing the class. One NE described fearing participants would feel she was taking advantage of them as "nonpaid employees" and worried they would feel she was asking them to do something she should be doing. She said of Extension volunteers in general, "I think that's a lot of how our volunteers have started to feel. 'We're volunteers because they don't have enough people to do these things.' And when our volunteers start feeling that way we start losing them." Another NE described her worries about overusing volunteers. She stated that for some participants, the praise of their peers might be enough to motivate them to continue as a volunteer leader but said for others, "...it's just not enough because they still feel like, 'Every time that [educator] has to go somewhere, I'm the only person she calls. She doesn't call anybody else.'"

Educator Motivations: Personal and Community Benefits

Educators expressed varying perspectives on initial implementation of the StrongWomen Program. Most AEs were early adopters; several implemented the program before its adoption statewide. In contrast, NEs expressed reluctance to initially implement the program in their counties fueled by personal discomfort with teaching exercise, feeling too busy to implement the program, and grappling with new ideas about the appropriateness of exercise programming for Extension. Some felt they did not have time to conduct an exercise program in their counties or for strength training personally. Others described discomfort with implementing an exercise program due to negative personal attitudes toward exercise and weight concerns.

Dual benefits: Self and community. Educators' motivations to conduct the StrongWomen Program in their counties varied between groups. AEs described offering the program motivated by a dual benefit to self and to the community. In general, AEs chose to offer the program for a combination of personal and professional reasons; responses indicated they enjoyed being able to offer a program providing benefits both for themselves and for participants. AEs, who instructed the program themselves for at least the first twelve weeks at each location, cited personal benefits, such as "I get to work out at work" and "it helps me just feel better" along with the benefits for others. One AE commented on this dual benefit, remarking, "I appreciate the opportunity to have a program that improves not only my own health, but I can help other people improve their own physical health. Because it helps me; while I'm helping them, it helps me."

Both groups of educators mentioned general personal health benefits, but the NEs cited specific personal benefits they received from the program, with nearly all mentioning getting to exercise at work as a benefit. Comments made by NEs referenced the program meeting personal needs for physical activity. For one, a nonexerciser, the program helped her to initiate physical activity habits. Many NEs felt they would have difficulty continuing to exercise if they were not instructing StrongWomen groups. Some said their exercise routines suffered when the StrongWomen group ceased meeting, remarking "since we stopped exercising, I stopped exercising" and "during the training for StrongWomen, I was in probably...the best shape I've been in, and it's really amazing once you quit how [the weight] all starts coming back."

For some NEs, it seemed a personal need for the group to maintain their own exercise habits may have offered greater benefits than program expansion. One described her reasons for not using volunteer leaders and what would cause her to expand the program: "The only reason I haven't [transitioned to volunteer leadership] is because it motivates me to still exercise." This educator expressed confidence the group could continue on its own but also perceived they need her there for reassurance, projecting for the group, "As long as [educator name] is there, we can do it." She goes on to say "I really think that they could [go on]. It's just being put in that position to actually do it."

Social support. Social support, both emotional and for continuance of physical activity habits, emerged as an important factor in educator adoption of the volunteer delivery model and a possible reason why some educators did not transition StrongWomen groups to volunteer leadership. AEs spoke of social support generated within the group among participants; more than half the NEs gave examples of social support provided to them as group instructors from program participants. Educator views on the role of social support within strength training groups were similar between AEs and NEs. Educators in both groups felt the socialization provided within the group was an important component of the program and was valued by participants. AEs spoke of the role of social support within the group as a whole and cited the importance of the group in helping participants maintain exercise habits.

NEs spoke of feeling encouraged and validated by group members. One said of her group, “To me it feels like a family.” This sentiment was expressed by others, describing the group as “one big, happy family.” NEs spoke of caring and concern from group members. One said, “If I wasn’t here they’d call the office to find out ‘Now what’s wrong with her? Now what can we do?’” NEs also spoke of the support and encouragement received within the group setting, validation received from the group, and fulfillment of their own needs for socialization. NEs mentioned positive, affirming feedback from group members and feeling liked and appreciated.

Discussion

These findings help explain how comfort with volunteer delivery approaches and motivations in offering programs may affect willingness of educators to utilize volunteer leaders for community-based strength training programs. Understanding these factors is important for increasing program access in rural, underserved areas as use of lay or volunteer leaders is a strategy shown to enhance sustainability (Robertson et al., 2014; Washburn et al., 2014; Werner et al., 2014). Lay- or volunteer-led fitness programs have been implemented in hospitals, senior centers, and other community settings (Lachenmayr & Mackenzie, 2004). Beyond the StrongWomen program and Extension context, the findings described here can inform proactive strategies to address barriers and strengthen perceived benefits of volunteer delivery when programs are adapted and implemented in real-world settings.

Diffusion of Innovations Theory provides a framework for explaining differences among AEs and NEs. According to Diffusion of Innovations Theory, five factors influence adoption of an innovation such as the volunteer delivery approach described here: relative advantage; compatibility; complexity, or degree of perceived difficulty; trialability; and observability (Rogers, 2003). Relative advantage, compatibility, and complexity are most important in explaining innovation adoption rates. The influence of each factor on adoption depends on the adopter category, which Rogers (2003) identifies as innovators, early adopters, early majority, late majority, and laggards. For example, late majority adopters may rely more heavily on observability than early adopters, who are persuaded by relative advantage. Within the context described here, observability is limited due to geographic isolation of county educators and thus may be a factor slowing adoption rates among NEs.

Perceived advantages of adopting the volunteer delivery approach, or relative advantage, and perceived compatibility were the primary factors differing between AEs and NEs. Relative advantage is the degree to which people perceive an idea, in this case, use of volunteer leaders, is better than the existing standard delivery by Extension educators. Perceived compatibility is the degree to which the volunteer delivery approach aligns with the values, experiences, and needs of potential adopters. Comments of AEs indicated understanding of the role differences between educators and volunteers; they valued volunteers in Extension programs and felt a greater degree

of compatibility with volunteer-led approaches than did NEs. Further, concerns about volunteer leadership, which were expressed by both educator groups, indicated that AEs perceived greater compatibility and less complexity with the volunteer delivery approach than did NEs.

Comfort with the volunteer delivery approach varied between educator groups. Both groups expressed concerns about instructional quality, but AEs were able to manage these concerns and utilize volunteer leaders whereas NEs were not, suggesting AEs perceived a greater degree of relative advantage in adopting the volunteer delivery approach. Maintaining program quality is a relevant concern in volunteer programs (Studer & von Schnurbein, 2013). However, an underlying issue influencing differences between groups may be hesitance among NEs to ask program participants to step into leadership roles. Other studies have found that personal invitations effectively engage volunteers (Farris, McKinley, Ayres, Peters, & Brady, 2009). Educator requests were found to be a primary reason why volunteers agreed to serve in this program (Washburn et al., 2015). Directly and personally asking participants to serve as volunteers may be a key behavior to expand program access.

Comments from NEs suggest an imbalance of perceived benefits and barriers, indicating the importance of relative advantage in prompting adoption decisions. NEs benefited from remaining as group instructor; loss of benefits was a barrier to transitioning groups. For example, NEs seemed more reliant on the strength training group to ensure personal exercise habits were maintained and for social support, which is associated with exercise maintenance (Kahn et al., 2002; McAuley, Jerome, Marquez, Elvasky, & Blissmer, 2003). It may be that the group filled educator personal needs for social interaction, or the group support helped them to feel successful in their educator role. For NEs, transitioning to volunteer leadership would mean forfeiting these personal benefits. This underlying barrier, when added to those named by NEs, such as perceived lack of willing volunteers, made the perceived benefits of remaining as group leader outweigh the benefits of transitioning to volunteer leadership.

Understanding and acceptance of educator-volunteer leader roles and differences in teaching styles also appears to influence adoption. Consistent with other studies of factors affecting volunteers in organizations, NEs may not understand their role and relationship to volunteers and may feel threatened by them (Kreutzer & Jager, 2011; Studer & von Schnurbein, 2013). Others have suggested successful Extension programs position educators as facilitators, as opposed to subject-matter experts, as is the traditional Extension approach to educational programming (Dillivan, 2013; D. Sellers, personal communication, January 4, 2016). This aligns with AE methods and helps explain why NEs may have experienced difficulties with the volunteer leadership transition or perceived the approach as incompatible with their preferred program delivery methods.

The value placed on volunteer leadership by Extension educators may be a factor in delivery method decisions. Volunteer leaders may be viewed as a back-up plan for program delivery when the educator is unavailable. Educator delivery may be perceived as the ‘gold standard’ and volunteer delivery may be seen as ‘plan b.’ The perception of educator delivery as superior to volunteer delivery may be a contributing factor when volunteers are not utilized (Snider, 1985). A paradigm shift is needed so volunteer engagement in program delivery is a priority, not part of a back-up plan. This shift might involve a change in values or needs among NEs, indicating that perceived compatibility was inadequate to prompt transition to volunteer leadership.

Volunteer management skills are needed to be a successful Extension educator (Cooper & Graham, 2001) and are important for any professional working with volunteers. Despite the organizational value of effective volunteer management, educator training is typically insufficient (Boyd, 2004; Cooper & Graham, 2001; Seevers, Baca, & VanLeeuwen, 2005). Expanded knowledge and skill in working with volunteers may address some factors identified here, such as understanding of role differences between educators and volunteers. Findings point to a need for focused volunteer management training for professionals who coordinate volunteer-led programs. Such training might reduce perceived complexity of managing volunteers engaged in program delivery.

Identifying factors affecting adoption of volunteer delivery approaches is important considering the impact volunteer leadership has on program sustainability. Sustainability, which can be defined as the capacity of a project to continue to deliver its intended benefits over a long period of time, is important for community-based programs to make a long-term difference in health behaviors (Scheirer & Dearing, 2011; Stirman et al., 2012). Program access and continuation is limited when volunteer delivery approaches are available but not adopted. For those in rural, underserved areas who could most benefit from volunteer-led community programs, addressing the factors identified here is critical to ensure those most in need have access.

Limitations

A limitation of the argument presented here is the lack of evidence for the effectiveness of volunteer leaders compared to educators conducting the program. Studies comparing effectiveness of volunteer leaders versus professionals in other programs found participant outcomes were similar (Dorgo et al., 2013; Healy et al., 2008; Sobel, Lorig, & Hobbs, 2002). StrongWomen is a structured program, and when instructed by volunteer leaders, is conducted under the guidance of Extension educators to extend access to an otherwise fixed length program. When program protocols are followed, participant outcomes are expected to be consistent with previous effectiveness studies (Seguin, et al., 2012). Thus, we focus here on factors affecting expansion of volunteer delivery approaches to make ongoing, structured strength training classes available in rural areas where access would otherwise be limited or

nonexistent (Washburn, et al., 2014). Understanding factors affecting adoption by program decision makers can help other organizations avoid barriers and strengthen perceived benefits as they plan to implement volunteer delivery approaches.

The StrongWomen Program was introduced as an educator-led program and evolved to include volunteer delivery. This makes it difficult to speculate whether adoption might have been different had intent to transition always been part of the delivery model. Gradual evolution of the program from educator to volunteer leadership, as opposed to program initiation with a clear intent to transition, may play a role in adoption, but data to support this are not available. Educators may perceive transition to volunteer leadership as unnecessary or undesirable. While volunteer leadership was not required, within the context described, it is the most feasible option for ensuring program sustainability. As such, strategies for addressing the issues identified here are needed. Further study is needed to identify barriers and facilitators beyond the educator perspectives described which may affect adoption of volunteer delivery approaches.

Conclusion

This study provides insight on factors affecting adoption of a volunteer delivery approach for community-based strength training programs. Comfort with the volunteer approach and motivations for conducting the program influenced educator decisions about transitioning strength training groups to volunteer leadership. Programs adapted for volunteer delivery should clearly delineate educator and volunteer roles and ensure adequate training for those managing volunteers. These findings can assist other organizations as they seek to expand program access by utilizing volunteer leaders in new programs or in transitioning existing programs from professional to volunteer delivery.

References

- Baker, K. R., Nelson, M. E., Felson, D. T., Layne, J. E., Sarno, R., & Roubenoff, R. (2001). The efficacy of home based progressive strength training in older adults with knee osteoarthritis: A randomized controlled trial. *The Journal of Rheumatology*, 28(7), 1655–1665.
- Batik, O., Phelan, E. A., Walwick, J. A., Wang, G., & LoGerfo, J. P. (2008). Translating a community-based motivational support program to increase physical activity among older adults with diabetes at community clinics: A pilot study of Physical Activity for a Lifetime of Success (PALS). *Preventing Chronic Disease*, 5(1), 1–7. Retrieved from http://cdc.gov/pcd/issues/2008/jan/07_0142.htm
- Beniamini, Y., Rubenstein, J. J., Faigenbaum, A. D., Lichtenstein, A. H., & Crim, M. C. (1999). High-intensity strength training of patients enrolled in an outpatient cardiac rehabilitation program. *Journal of Cardiopulmonary Rehabilitation*, 19(1), 8–17.

- Boyd, B. L. (2004). Extension agents as administrators of volunteers: Competencies needed for the future. *Journal of Extension*, 42(2), Article 2FEA4. Retrieved from <http://www.joe.org/joe/2004april/a4.php>
- Braith, R. W., & Stewart, K. J. (2006). Resistance exercise training: Its role in the prevention of cardiovascular disease. *Circulation*, 113(22), 2642–2650. doi:<http://dx.doi.org/10.1161/CIRCULATIONAHA.105.584060>
- Brudney, J. (2010). Designing and managing volunteer programs. In D. O. Renz (Ed.), *The Jossey-Bass handbook of nonprofit leadership and management* (3rd ed., pp. 753–793). San Francisco, CA: Jossey-Bass.
- Buman, M. P., Giacobbi, P. R., Jr., Dzierzewski, J. M., Aiken Morgan, A., McCrae, C. S., Roberts, B. L., & Marsiske, M. (2011). Peer volunteers improve long-term maintenance of physical activity with older adults: A randomized controlled trial. *Journal of Physical Activity and Health*, 8(Suppl 2), S257–266. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3181088/>
- Cassill, H., Culp, K., III, Hettmansperger, J., Stillwell, M., & Sublett, A. (2012). Volunteer middle managers: Human resources that extend programmatic outreach. *Journal of Extension*, 50(2), Article 2IAW1. Retrieved from <http://www.joe.org/joe/2012april/iw1.php>
- Castenada, C., Layne, J., Munoz-Orians, L., Gordon, P., Walsmith, J., Foldvari, M., . . . Nelson, M. (2002). A randomized controlled trial of resistance exercise training to improve glycemic control in older adults with type 2 diabetes. *Diabetes Care*, 25(12), 2335–2341. doi:<http://dx.doi.org/10.2337/diacare.25.12.2335>
- Cooper, A. W., & Graham, D. L. (2001). Competencies needed to be successful county agents and county supervisors. *Journal of Extension*, 39(1), Article 1RIB3. Retrieved from <http://www.joe.org/joe/2001february/rb3.php>
- Crabtree, B. F., & Miller, W. L. (1999). Using codes and code manuals: A template organizing style of interpretation. In B. F. Crabtree & W. L. Miller (Eds.), *Doing qualitative research* (2nd ed.; pp. 163–177). Thousand Oaks, CA: Sage.
- Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Los Angeles, CA: Sage.
- Cuff, D. J., Meneilly, G. S., Martin, A., Ignaszewski, A., Tildesley, H. D., & Frohlich, J. J. (2003). Effective exercise modality to reduce insulin resistance in women with type 2 diabetes. *Diabetes Care*, 26(11), 2977–2982. doi:<http://dx.doi.org/10.2337/diacare.26.11.2977>
- Dillivan, K. D. (2013). Connecting volunteers and agents: A social constructionist perspective. *Journal of Extension*, 51(2), Article 2IAW7. Retrieved from <http://www.joe.org/joe/2013april/iw7.php>
- Dorgo, S., King, G. A., Bader, J. O., & Limon, J. S. (2013). Outcomes of a peer mentor implemented fitness program in older adults: A quasi-randomized controlled trial. *International Journal of Nursing Studies*, 50(9), 1156–1165. doi:[10.1016/j.ijnurstu.2012.12.006](http://dx.doi.org/10.1016/j.ijnurstu.2012.12.006)

- Fan, J. X., Wen, M., & Kowaleski-Jones, L. (2014). Rural-urban differences in objective and subjective measures of physical activity: Findings from the National Health and Nutrition Examination Survey (NHANES) 2003–2006. *Preventing Chronic Disease, 11*(E141), 1–11. doi:10.5888/pcd11.140189
- Farris, E., McKinley, S., Ayres, J., Peters, J., & Brady, C. (2009). County-level Extension leadership: Understanding volunteer board member motivation. *Journal of Extension, 47*(5), Article 5RIB3. Retrieved from <http://www.joe.org/joe/2009october/rb3.php>
- Graff, L. (2006). Declining profit margin: When volunteers cost more than they return. *The International Journal of Volunteer Administration, 24*(1), 24–32. Retrieved from http://www.ijova.org/PDF/VOL24_NO1/IJOVA_VOL24_NO1_Profit_Margin_Linda_Graff.pdf
- Healy, T. C., Peng, C., Haynes, M. S., McMahon, E. M., Botler, J. L., & Gross, L. (2008). The feasibility and effectiveness of translating A Matter of Balance into a volunteer lay leader model. *Journal of Applied Gerontology, 27*(1), 34–51. doi:10.1177/0733464807308620
- Jamison, I. (2003). Turnover and retention among volunteers in human service agencies. *Review of Public Personnel Administration, 23*(2), 114–132. doi:10.1177/0734371X03023002003
- Jones, C. A., Parker, T. S., Ahearn, M., Mishra, A. K., & Variyam, J. N. (2009). *Health status and health care access of farm and rural populations* (Bulletin No. 57). Washington, DC: United States Department of Agriculture, Economic Research Service. Retrieved from http://www.ers.usda.gov/media/155453/eib57_1_.pdf
- Kahn, E. B., Ramsey, L. T., Brownson, R. C., Heath, G. W., Howze, E. H., Powell, K. E., . . . Corso, P., and the Task Force on Community Preventive Services. (2002). The effectiveness of interventions to increase physical activity: A systematic review. *American Journal of Preventive Medicine, 22*(4S), 73–107. doi:10.1016/S0749-3797(02)00434-8
- Kelley, G. A., & Kelley, K. S. (2000). Progressive resistance exercise and resting blood pressure: A meta-analysis of randomized controlled trials. *Hypertension, 35*(3), 838–843. doi:10.1161/01.HYP.35.3.838
- Kreutzer, K., & Jäger, U. (2011). Volunteering versus managerialism: Conflict over organizational identity in voluntary associations. *Nonprofit and Voluntary Sector Quarterly, 40*(4), 634–661. doi:10.1177/0899764010369386
- Lachenmayr, S., & Mackenzie, G. (2004). Building a foundation for systems change: Increasing access to physical activity programs for older adults. *Health Promotion Practice, 5*(4), 451–458. doi:10.1177/1524839903257312
- Layne, J. E., & Nelson, M. E. (1999). The effects of progressive resistance training on bone density: A review. *Medicine and Science in Sports and Exercise, 31*(1), 25–30. doi:10.1097/00005768-199901000-00006

- Layne, J. E., Sampson, S. E., Mallio, C. J., Hibberd, P. L., Griffith, J. L., Krupa Das, S., . . . Castaneda-Sceppa, C. (2008). Successful dissemination of a community-based strength training program for older adults by peer and professional leaders: The People Exercising Program. *Journal of the American Geriatrics Society*, *56*(12), 2323–2329. doi:10.1111/j.1532-5415.2008.02010.x
- Lewin, S. A., Dick, J., Pond, P., Zwarenstein, M., Aja, G., vanWyk, B., . . . Patrick, M. (2005). Lay health workers in primary and community health care: A systematic review of trials. *Cochrane Database of Systematic Reviews*. doi:10.1002/14651858.CD004015.pub2
- Lorig, K. R., Feigenbaum, P., Regan, C., Ung, E., Chastain, R. L., & Holman, H. R. (1986). A comparison of lay-taught and professional-taught arthritis self management courses. *The Journal of Rheumatology*, *13*(4), 763–767.
- Lorig, K. R., Mazonson, P. D., & Holman, H. R. (1993). Evidence suggesting that health education for self-management in patients with chronic arthritis has sustained health benefits while reducing health care costs. *Arthritis and Rheumatism*, *36*(4), 439–446. doi:10.1002/art.1780360403
- Lorig, K. R., Ritter, P. L., Laurent, D. D., & Fries, J. F. (2004). Long-term randomized controlled trials of tailored-print and small-group arthritis self-management interventions. *Medical Care*, *42*(4), 346–354.
- Manetti, G., Bellucci, M., Como, E., & Bagnoli, L. (2015). Investing in volunteering: Measuring social returns of volunteer recruitment, training and management. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, *26*(5), 2104–2129. doi:10.1007/s11266-014-9497-3
- McAuley, E., Jerome, G. J., Marquez, D. X., Elvasky, S., & Blissmer, B. (2003). Exercise self-efficacy in older adults: Social, affective, and behavioral influences. *Annals of Behavioral Medicine*, *25*(1), 1–7. doi:10.1207/S15324796ABM2501_01
- Nelson, M. E., Fiatarone, M. A., Morganti, C. M., Trice, I., Greenberg, R. A., & Evans, W. J. (1994). Effects of high-intensity strength training on multiple risk factors for osteoporotic fractures: A randomized controlled trial. *Journal of the American Medical Association*, *272*(24), 1909–1914. doi:10.1001/jama.1994.03520240037038
- Nelson, M. E., Rejeski, W. J., Blair, S. N., Duncan, P. W., Judge, J. O., King, A. C., . . . Castaneda-Sceppa, C. (2007). Physical activity and public health in older adults: Recommendation from the American College of Sports Medicine and the American Heart Association. *Circulation*, *116*(9), 1094–1105. doi:http://dx.doi.org/10.1161/CIRCULATIONAHA.107.185650
- Nelson, M., & Seguin, R. (2005). *The StrongWomen Tool Kit*. Boston, MA: Tufts University.
- Onwuegbuzie, A. J., & Leech, N. L. (2007). A call for qualitative power analyses. *Quality & Quantity*, *41*(1), 105–121. doi:10.1007/s11135-005-1098-1
- Peel, N. M., & Warburton, J. (2009). Using senior volunteers as peer educators: What is the evidence of effectiveness in falls prevention? *Australasian Journal on Ageing*, *28*(1), 7–11. doi:10.1111/j.1741-6612.2008.00320.x

- Plotnikoff, R. C., & Karunamuni, N. (2011). Steps towards permanently increasing physical activity in the population. *Current Opinion in Psychiatry*, 24(2), 162–167. doi:10.1097/YCO.0b013e3283438107
- Robertson, L., Hale, B., Waters, D., Hale, L., & Andrew, A. (2014). Community peer-led exercise groups: Reasons for success. *Internet Journal of Allied Health Sciences and Practice*, 12(2), Article 9. Retrieved from <http://nsuworks.nova.edu/cgi/viewcontent.cgi?article=1483&context=ijahsp>
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York, NY: Free Press.
- Scheirer, M. A., & Dearing, J. W. (2011). An agenda for research on the sustainability of public health programs. *American Journal of Public Health*, 101(11), 2059–2067. doi:10.2105/AJPH.2011.300193
- Schoenborn, C. A., & Heyman, K. H. (2009). Health characteristics of adults aged 55 years and over: United States, 2004–2007. *National Health Statistics Reports* (Number 16). Hyattsville, MD: National Center for Health Statistics.
- Schutzer, K. A., & Graves, B. S. (2004). Barriers and motivations to exercise in older adults. *Preventive Medicine*, 39(5), 1056–1061. doi:10.1016/j.ypmed.2004.04.003
- Seevers, B. S., Baca, J. S., & VanLeeuwen, D. (2005). Training methods and needs related to volunteer management competencies of Extension 4-H youth development agents. *Journal of Extension*, 43(6), Article 6RIB3. Retrieved from <http://www.joe.org/joe/2005december/rb3.php>
- Seguin, R. A., Economos, C. D., Nelson, M. E., Hyatt, R., Palombo, R., & Reed, P. N. T. (2008). Design and national dissemination of the StrongWomen Community Strength Training Program. *Preventing Chronic Disease*, 5(1), 1–13. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2248774/>
- Seguin, R. A., Heidkamp-Young, E., Kuder, J., & Nelson, M. E. (2012). Improved physical fitness among older female participants in a nationally disseminated, community-based exercise program. *Health Education & Behavior*, 39(2), 183–190. doi:10.1177/1090198111426768
- Seguin, R. A., Palombo, R., Economos, C. D., Hyatt, R., Kuder, J., & Nelson, M. E. (2008). Factors related to leader implementation of a nationally disseminated community-based exercise program: A cross-sectional study. *International Journal of Behavioral Nutrition and Physical Activity*, 5(62), 1–12. doi:10.1186/1479-5868-5-62
- Smith, M. L., Ahn, S. N., Sharkey, J. R., Horel, S., Mier, N., & Ory, M. G. (2012). Successful falls prevention programming for older adults in Texas: Rural–urban variations. *Journal of Applied Gerontology*, 31(1), 3–27. doi:10.1177/0733464810378407
- Snider, A. (1985). The dynamic tension: Professionals and volunteers. *Journal of Extension*, 23(3), Article 3FEA2. Retrieved from <http://www.joe.org/joe/1985fall/sa2.php>
- Sobel, D. S., Lorig, K. R., & Hobbs, M. (2002). Chronic Disease Self-Management Program: From development to dissemination. *The Permanente Journal*, 6(2), 15–22. Retrieved from <https://www.thepermanentejournal.org/files/Spring2002/selfmanage.pdf>

- Stirman, S. W., Kimberly, J., Cook, N., Calloway, A., Castro, F., & Charns, M. (2012). The sustainability of new programs and innovations: A review of the empirical literature and recommendations for future research. *Implementation Science*, 7(17), 1–19. doi:10.1186/1748-5908-7-17
- Streubert, H. J., & Carpenter, D. R. (2010). *Qualitative research in nursing: Advancing the humanistic imperative* (5th ed.). Philadelphia, PA: Lippincott Williams & Wilkins.
- Studer, S., & von Schnurbein, G. (2013). Organizational factors affecting volunteers: A literature review on volunteer coordination. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 24(2), 403–440. doi:10.1007/s11266-012-9268-y
- Turner, B., Kennedy, A., Kendall, M., & Muenchberger, H. (2014). Supporting the growth of peer-professional workforces in healthcare settings: An evaluation of a targeted training approach for volunteer leaders of the STEPS Program. *Disability and Rehabilitation*, 36(14), 1219–1226. doi:10.3109/09638288.2013.845251
- University of Arkansas System Division of Agriculture. (2015). *Rural profile of Arkansas: Social and economic trends affecting rural Arkansas*. Little Rock, AR: University of Arkansas Cooperative Extension Service Printing Services. Retrieved from <https://www.uaex.edu/publications/pdf/MP-531.pdf>
- U.S. Department of Agriculture, Economic Research Service. (2014). *Rural America at a glance: 2014 edition* (Brief No. 26). Washington, DC: United States Department of Agriculture, Economic Research Service. Retrieved from <http://www.ers.usda.gov/media/1697681/eb26.pdf>
- U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions. (2007). Community Health Worker National Workforce Study. Retrieved from <http://bhpr.hrsa.gov/healthworkforce/reports/chwstudy2007.pdf>
- Warburton, D. E. R., Gledhill, N., & Quinney, A. (2001). The effects of changes in musculoskeletal fitness on health. *Canadian Journal of Applied Physiology*, 26(2), 161–216. doi:10.1139/h01-012
- Washburn, L. T., Cornell, C. E., Phillips, M., Felix, H., & Traywick, L. (2014). Strength training in community settings: Impact of lay leaders on program access and sustainability for rural older adults. *Journal of Physical Activity & Health*, 11(7), 1408–1414. doi:http://dx.doi.org/10.1123/jpah.2013-0007
- Washburn, L. T., Cornell, C. E., Traywick, L., Felix, H. C., & Phillips, M. (2015). Motivations of volunteer leaders in an Extension exercise program. *Journal of Extension*, 53(6), Article 6FEA5. Retrieved from <http://www.joe.org/joe/2015december/a5.php>
- Werner, D., Teufel, J., & Brown, S. L. (2014). Evaluation of a peer-led, low-intensity physical activity program for older adults. *American Journal of Health Education*, 45(3), 133–141. doi:10.1080/19325037.2014.893851

- Williams, M. A., Haskell, W. L., Ades, P. A., Amsterdam, E. A., Bittner, V., Franklin, B. A., . . . Stewart, K. J. (2007). Resistance exercise in individuals with and without cardiovascular disease – 2007 update: A scientific statement from the American Heart Association Council on Clinical Cardiology and Council on Nutrition, Physical Activity, and Metabolism. *Circulation*, *116*(5), 572–584.
doi:10.1161/CIRCULATIONAHA.107.185214
- Wisner, P. S., Stringfellow, A., Youngdahl, W. E., & Parker, L. (2005). The service volunteer–loyalty chain: An exploratory study of charitable not-for-profit service organizations. *Journal of Operations Management*, *23*(2 Spec. Iss.), 143–161.
doi:10.1016/j.jom.2004.07.003
- Yan, T., Wilber, K. H., Aguirre, R., & Trejo, L. (2009). Do sedentary older adults benefit from community-based exercise? Results from the Active Start Program. *The Gerontologist*, *49*(6), 847–855. doi:10.1093/geront/gnp113

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