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Barriers and Facilitators to Senior Centers Participating in Translational Research

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Abstract

Senior centers are ideal locations to deliver evidence-based health promotion programs to the rapidly-growing population of older Americans to help them remain healthy and independent in the community. However, little reported research is conducted in partnership with senior centers; thus, not much is known about barriers and facilitators for senior centers serving as research sites. To fill this gap and potentially accelerate research within senior centers to enhance translation of evidence-based interventions into practice, the present study examined barriers and facilitators of senior centers invited to participate in a cluster-randomized controlled trial. Primary barriers to participation related to staffing and perceived inability to recruit older adult participants meeting research criteria. The primary facilitator was a desire to offer programs that were of interest and

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beneficial to seniors. Senior centers are interested in participating in research that provides benefit to older adults but may need assistance from researchers to overcome participation barriers.

Keywords

Senior Centers; Older Adults; Behavioral Interventions; Translational Research; Research Sites; Research Recruitment

Senior centers are community-based facilities offering recreational, socialization and nutritional programs for older adults (≥60 years). These facilities have been specifically described by the National Council on Aging as places where “older adults come together for services and activities that reflect their experience and skills, respond to their diverse needs and interests, enhance their dignity, support their independence, and encourage their involvement in and with the center and the community”(Dal Santo, 2009). Today, more than 11,000 senior centers across the US serve over 1.5 million older adults each year (Administration on Aging, 2010), and represent an ideal location to reach a substantial number of older adults with evidence-based health promotion programs (Felix et al., 2012). However, literature on the translation of such programs into this “real world” setting is limited. Engaging senior centers in the process of translational research is essential in the sequence of moving empirically tested health promotion programs to communities so that the public health benefits can be realized ultimately by the growing population of older adults in the US. In this paper, we report findings from key informant interviews with senior center staff members about barriers and facilitators to participating in research. These interviews were conducted in the context of a larger study which assessed the translation of two evidence-based interventions (one targeting memory improvement and one targeting weight loss) delivered by lay health educators to older adults in Arkansas senior centers.

Description of the Problem

Older Americans (age ≥ 60 years) often have multiple chronic conditions, such as arthritis (49%), hypertension (41%), heart disease (31%), and diabetes (18%) (AOA, 2009). Additionally, 22% of older adults have mild cognitive impairment (without dementia) (Plassman et al., 2008) and 27% are considered obese (AOA, 2009). Mild cognitive impairment in older adults is associated with some functional challenges, such as limitations in the performance of instrumental activities of daily living (e.g. using the telephone, preparing meals) (Burton, Strauss, Bunce, Hunter, & Hultsch, 2009). Obesity among older adults is associated with the onset of strength loss, impairment in lower body mobility, and the inability to perform activities of daily living (e.g. grooming, transferring) as well as instrumental activities of daily living (Jenkins, 2004). Both obesity and mild cognitive impairment are associated with increased risk for nursing home placement (Elkins et al., 2006; Gaugler, Duval, Anderson, & Kane, 2007) (Gaugler et al., 2007). Thus, mild cognitive impairment and obesity, left unchecked, have the potential to produce health care utilization and costs, as well as functional decline among older adults, and may lead to early institutionalization.

Both mild cognitive impairment and obesity can be addressed through behavioral interventions (Angevaren, Aufdemkampe, Verhaar, Aleman, & Vanhees, 2008; Dickinson et al., 2006; The Diabetes Prevention Program (DPP) Research Group, 2002; The Diabetes Prevention Program Research Group, 2006). Senior centers represent an ideal venue for showcasing and delivering these interventions targeting older adults. Indeed, the Older Americans Act (Public Law 109–365) calls for senior centers to offer evidence-based health promotion programs. Numerous reports in the scientific literature demonstrate the wide array of interventions that could benefit older adults (King, Rejeski, & Buchner, 1998) and could potentially be offered through senior centers; however, the actual translation of such programs to the community has been slow (Glasgow, Lichtenstein, & Marcus, 2003).

Type 2 (T2) translational research offers a mechanism to move evidence-based health promotion programs into community settings. The community and practice settings represent the “laboratory” for T2 research where the effectiveness of interventions can be tested under real world conditions (Woolf, 2008) before they are broadly disseminated. This requires researchers to engage community-based entities, such as physicians’ offices and senior centers, in the research enterprise.

Recruitment and retention of individual research subjects has long been a challenge and is discussed extensively in the scholarly literature (Hunninghake, Darby, & Probstfield, 1987; Lovato, Hill, Hertert, Hunninghake, & Probstfield, 1997; Yancey, Ortega, & Kumanyika, 2006). However, for T2 researchers, there is little information on the recruitment and retention of clinical and/or non-clinical community-based sites, including senior centers, into research studies. Indeed, a search in PubMed for literature using the keyword ‘senior centers’ identified 122 articles published from January 1990 to February 2012. Based on a review of abstracts of those articles, only 27 articles appeared to test the effectiveness of interventions for older adults in US senior centers. The majority of this subset of articles referencing interventions delivered within senior centers provide details on the recruitment of individual participants into the intervention rather than how they engaged the senior center as a study site. Only two mentioned the process of recruiting senior centers into the research study (Baker, Gottschalk, & Bianco, 2007; West et al., 2011), and one of these was a report of results from the parent trial from which the current report emanates (West et al., 2011). Our trial recruited senior centers into the study by inviting senior center administrators by mail or phone to learn more about the study and by in-person contact at Area Agency on Aging meetings (West et al., 2011). In the Baker et al. study, a project partner with ties to senior centers (a local Area Agency on Aging) invited a convenience sample of senior centers to participate in the study (Baker et al., 2007). However, to date there have been no published reports providing insights into those parameters associated with research participation decisions by senior centers.

Purpose

With the number of older adults in the US expected to increase 36% from 40 million in 2010 to 55 million % by 2020 (AOA, 2011), there is need to expand research to guide development and provision of programs and services targeting this group. As noted, little reported research has been conducted in partnership with senior centers, and little is known

about barriers and facilitators for these senior centers to serve as research sites. The present research was conducted to begin filling this gap. To potentially accelerate research with senior centers to translate evidence-based interventions into practice, and to help older adults remain healthy and independent in the community, we report findings from a study of barriers and facilitators of senior centers invited to participate in a cluster randomized controlled trial described in detail elsewhere (Beck et al., 2011; West et al., 2011).

Methods

The Parent Trial

A cluster randomized controlled trial (NCT-01377506) was conducted with senior centers in Arkansas from 2007–2011 to evaluate the translation of two evidenced-based health promotion programs – a memory improvement intervention (Memory) and a behavioral lifestyle weight loss intervention (Lifestyle). These interventions were adapted from two successful programs (McDougall et al., 2010; The Diabetes Prevention Program (DPP) Research Group, 2002) that were evaluated in efficacy trials in which the interventions were delivered by highly-trained professionals from academic or university settings.

In the present trial, each participating senior center (N=16) was randomized to implement either the Lifestyle or Memory intervention delivered by lay health educators (LHEs) to older adults attending the senior center. LHEs are individuals from within the community who share characteristics and community ties with the target population and who provide outreach or engage in direct service delivery. LHEs have been identified as a critical health care support, particularly for underserved areas with close-knit communities like rural regions (HRSA, 2007; NRHA, 2000; Rosenthal et al., 2010; Rosenthal et al., 1998). To be eligible to participate in the trial, senior centers had to: (1) be willing to be randomized to either intervention; (2) be able to identify 2–3 LHEs from among current paid staff or unpaid volunteers to be trained to deliver the intervention to which the center was randomized; (3) provide space for the intervention sessions and participant assessments; and (4) agree to recruit 18 study-eligible older adults from the community for the year-long intervention. One senior center withdrew from participating due to a staffing change before randomization assignment was known.

Once enrolled in the trial, senior centers recruited healthy older adults (age ≥ 60 years) who were obese (BMI ≥ 30) and had no significant memory problems (Mini Mental Status Exam, MMSE (Folstein, Folstein, & Mchugh, 1975) score >23). No senior center was excluded if they failed to meet the 18 participant recruitment goal, and actual recruitment of participants at senior centers ranged from 8 to 21 individuals (mean = 15.2), for a total of 228 older adults enrolled in the trial.

LHEs were trained to deliver the interventions (Krukowski et al., 2012) which were offered in twelve weekly group sessions followed by nine monthly group sessions. Analysis of primary outcomes (weight change and memory improvement) employed the memory program as the “control” group for the lifestyle weight loss program analyses and vice versa. Analyses of 4-month outcomes indicated that the interventions delivered by LHEs to older adults in senior centers were effective in producing weight loss or memory improvement,

compared to their respective controls. Specifically, 38% of Lifestyle participants experienced a clinically meaningful weight loss of 5% of their baseline weight at 4-months compared with only ≥ 5% of those in the control (Memory) arm (West et al., 2011) and this difference was significant ($p<0.001$). Similarly, 33% of Memory participants experienced a clinically meaningful improvement in delayed memory as compared to 17% of those in the control (Lifestyle) arm ($p=0.011$) (Beck et al., 2011).

Methods for Examination of Barriers and Facilitators

A mixed methods approach was used to assess factors associated with senior center participation as sites in translational research. The quantitative aspect of the study included the use of descriptive statistics to examine characteristics of counties in which the participating and non-participating senior centers were located. Recruitment process logs were kept documenting all contacts with the senior centers that were approached to participate in the trial. These logs included a list of reasons given by centers for agreeing or declining to participate in the trial. Non-participating senior centers (n=34) included those that expressed interest in study participation but were ineligible (n=26) as well as those that were not interested and therefore eligibility was undetermined (n=8). Characteristics of counties in which senior centers were located (e.g., total population, proportion ≥ 60 years of age) were obtained from the US Census Bureau's American Community Survey.

The qualitative aspect of the report included key informant interviews with staff from the eight senior centers that were the first to enroll in the trial (i.e. half of the overall sample of senior centers eventually recruited) and with staff at eight centers randomly selected from among the 34 non-participating senior centers. The study timeline dictated the focus on the first eight senior centers enrolled because all interviews were conducted after full participation in the trial had ended. The interviews were conducted by study staff, primarily by phone (two were completed in person), and were facilitated by use of a semi-structured interview guide developed by the investigators to capture senior center characteristics and factors that affected decisions to participate in the trial. The questions on senior center characteristics inquired about size and staffing patterns, as well as programs and services provided at the center. The list of programs and services included in the interview guide was based on a list generated by the National Council on Aging (NCOA, n.d.). The questions about factors affecting participation related to specific eligibility inclusion and exclusion criteria for the trial (e.g., requirement to be randomized to study arm). In addition to specific probes, the interview included open-ended questions that allowed discussion of any barriers or facilitators that had not been prompted. Interviewees provided written informed consent prior to the start of the interviews, and received a $25 gift card for their participation. The interviews were digitally recorded and supplemented by interviewer notes. General themes were developed from the combined recordings and notes and reviewed by the investigators.

The University of Arkansas for Medical Sciences Institutional Review Board approved the study.

Results

Fifty of the 184 senior centers in Arkansas (Administration on Aging, 2008) were invited to participate in the trial. The 50 invited senior centers were geographically distributed among 39 (52%) of the state's 75 counties. These 39 counties ranged from metropolitan areas (county population > 200,000) to more sparsely populated rural areas (county population < 10,000). Sixteen senior centers, located in 12 counties, agreed to and were eligible to participate. The 34 non-participating senior centers were located in 28 counties across the state. On average, the population of counties with participating senior centers was larger (110,967 vs. 84,985 residents) and had a larger population of residents aged ≥ 60 years (21,802 vs. 14,957 older adult residents) than counties of non-participating senior centers (see Table 1).

Data from the recruitment process logs showed that nearly three-quarters (74%) of all senior centers invited to participate in the trial expressed some initial concerns about participating. Of the participating senior centers with initial concerns (n=6), the primary initial concern had to do with identifying LHEs to deliver the intervention. Of the non-participating senior centers with initial concerns (n=31), the top two primary initial concerns were identifying LHEs and recruiting 18 eligible participants for the intervention. Interviewees from the non-participating centers also cited these two concerns as their centers' primary reasons for not participating in the trial. These and other less frequently mentioned concerns are listed in Table 1.

The first eight senior centers that enrolled in the parent trial were invited to participate in the current analysis and all completed the key informant interviews. Twenty randomly-selected non-participating senior centers were invited to complete interviews, and eight consented (40%). The most common reason cited by the 12 non-participating senior centers that were invited but declined to be interviewed was that the staff member who had made the decision to not participate in the translation trial was no longer employed at the center (n=5). Other reasons for declining to be interviewed were: their participation required supervisors' approval that was not obtained or not sought (n=2); they did not want to provide their social security card number required to receive the gift card incentive (n=1); and no reason specified (n=4).

Initial Reactions to Trial

When initially approached to participate in the trial, most participating and non-participating senior centers were positive, with most participating centers being "greatly interested" and seeing the study interventions as potentially beneficial to center attendees; most non-participating senior centers thought the program "was a great idea" and were "excited about learning more" about the study. One staff member from a non-participating senior center said:

> I thought it would be good for [senior center attendees] to participate in something like this. I thought it would be beneficial to them, and I was really looking forward to it.

Recruiting Older Adult Participants

Few of the participating senior centers were concerned about recruiting the target of 18 older adult participants. Conversely, non-participating senior centers were particularly concerned about recruiting the required number of study-eligible older adults to participate for the full length of the program (one-year), stating that they had concerns about finding enough individuals willing to make the year-long time commitment. Non-participating senior centers also mentioned that other programs of shorter duration offered at their centers (e.g., Active Living Every Day) had experienced attendance/participation issues, leading to expectations of difficulties in recruiting the requisite number of eligible adults for the trial. Indeed, about half of the non-participating senior centers indicated their decision to participate might have been different if they did not have to achieve the specified accrual goal and/or if the program had been shorter in duration.

Although participating senior centers did not have initial concerns about the recruitment goal of 18 older adults, most of them failed to meet this accrual goal. Thus, a distinction between those senior centers that elected not to participate and those that did may be that the latter were more (unrealistically) optimistic than the former. For the participating senior centers that did not enroll 18 older adults at their center (N=4), the primary challenge to recruitment cited was the BMI criterion that assured all older adults were obese; this was expressed most frequently among senior centers randomized to the Memory intervention. Staff at one participating senior center said:

> I had a lot of people who were really interested in participating [in the Memory program], but they did not meet those [weight and BMI] criteria. So that eliminated some people who wanted to participate at that time.

Staffing

Few of the participating centers reported initial concerns about finding staff or volunteers to serve as LHEs to deliver the intervention, although they noted that they needed to “find the right people.” In retrospect, the participating senior centers reported the biggest barrier to recruiting LHEs to deliver the program was the length of commitment required (training period plus delivery of the 12-month program). In contrast, the non-participating senior centers who were interviewed reported staffing to be a major concern:

> I would have liked to [participate in the trial] but… we didn’t have the paid staff. Like I said, it’s not like we had someone that could have done that at the time. And, then volunteers…you can’t depend on someone to do something for [that] length of time…

Half of the non-participating senior centers indicated that if their staffing/volunteer situation had been different, their decision to participate would have been different. In addition, these centers reported that the main resource that would have enabled their participation would have been if staff or volunteers had been provided by the trial to deliver the intervention for them. For at least two participating senior centers, staffing was a primary concern that was overcome in collaboration with contacts provided by the research team which facilitated access to volunteers to serve as LHE (e.g., contacts within the Arkansas Cooperative Extension Service). Finally, the senior center that had agreed to participate but had to

withdraw from the trial (prior to learning the arm to which they were randomized) did so because a sudden change in staffing meant that they no longer had sufficient personnel to support basic senior center operations and to serve as the LHE to deliver the health promotion program.

Length of Intervention

Most of the non-participating senior centers expressed concern about the length of the intervention, indicating it would be a deterrent to potential participants. Both health promotion interventions were to be administered over one year, with weekly sessions for twelve weeks and then nine monthly sessions thereafter. Non-participating centers felt that this extended duration would prohibit getting participants to commit to enrolling, saying, for example, of potential participants:

> I've gone through it many, many times. They will come to me, want a program, let's do this, let's do this. Okay. I make arrangements, get everything set up for them, and they are okay for the first few weeks and then all of a sudden pretty soon I am setting up to an empty room.

The non-participating senior centers reported their decision to participate might have been different if the intervention was shorter, with one non-participating senior center suggesting six weeks as the maximum length that would allow for optimal participation while another suggested two to three weeks. Participating senior centers also reported concerns that the length of the intervention was a factor in recruiting volunteers or staff to deliver the program, but these concerns did not prevent their participation. Nonetheless, shortening the program to get better participation from older adults was a suggestion made by some LHEs after delivery of the year-long intervention (Krukowski et al., 2012) suggesting that the concern was enduring.

Research

Only one of the participating senior centers reported any concerns related to enrolling in a research study. This center reported "a little apprehension," which was related to the randomization process because this center preferred one program over the other. Furthermore, all participating senior centers indicated they would respond favorably to an opportunity to participate in another research study if the opportunity arose, because they wanted to offer programs that helped seniors and their experience in the present trial was positive. Similarly, none of the non-participating senior centers interviewed indicated any concerns or reservations about enrolling in a research study. However, most non-participating centers interviewed indicated they would have preferred to know which intervention they would be offering when considering enrollment in the trial rather than having to agree to participate and then wait for random assignment. In fact, nearly all non-participating senior centers interviewed indicated that if randomization had not been required their decision to participate might have been different. Despite expressing this sentiment, non-participating senior centers did not indicate that their concern about randomization was the reason that they finally decided not to participate in the trial (See Table 1).

Primary Facilitator/Barrier

The participating senior centers that were interviewed indicated the major factor determining their decision to participate in the trial was that the intervention covered topics that would be of interest to seniors. For the non-participating senior centers that were interviewed, the primary reason for their decision not to participate in the trial was the challenge of finding enough older adult participants to commit to the intervention for its duration.

Discussion

We approached 50 senior centers in Arkansas about participating in a cluster randomized controlled trial to assess the translation of two evidence-based interventions into practice, with 16 agreeing to participate. We subsequently interviewed eight participating and eight non-participating senior centers to identify several barriers and facilitators to senior centers serving as sites in research studies.

The two primary barriers preventing the 8 non-participating senior centers from enrolling in the trial had to do with the requirement to identify LHEs to deliver the intervention and the requirement to recruit 18 study-eligible older adults into the trial. Staffing issues have been expressed as barriers to research participation by other community-based sites, including ambulatory care providers (Bakken, Lantigua, Busacca, & Bigger, 2009). This finding has relevance for other translational research studies interested in research to bring beneficial evidence-based programs to community settings; community organizations involved in such studies are likely to need assistance from research teams to overcome this barrier.

In general, staff at participating senior centers felt they would not have trouble identifying individuals to serve as LHEs to deliver the intervention locally. However, in actuality, several participating senior centers did experience challenges in identifying LHEs. To assist them in overcoming this barrier, the research team facilitated access to volunteers to serve as LHEs through existing contacts with other community-based organizations that had access to a network of volunteers (e.g., Arkansas Cooperative Extension Service). To facilitate the recruitment of community-based research sites, this level of assistance could be formally offered during the initial approach of the community sites. Additionally, researchers should pay particular attention to staffing requirements, incorporating delivery elements in the interventions or programs to minimize burden on local organizations and/or providing aides for the recruitment of volunteers to serve a program leaders. For example, implementation toolkits could include tips on types of individuals likely to be good LHEs, as well as community organizations with which they might collaborate to identify LHEs (e.g., the Retired Senior Volunteer Program is the largest volunteer network for persons age 55 years or older in the US). Finally, if resources permit, funds could be allocated in the research budget to provide research staff to deliver the intervention or pay local personnel to deliver the intervention. However, this level of resource assistance is less likely to be sustained, resulting in a limited likelihood of broad-based adoption of interventions proven effective in translational research trials.

The other primary barrier to participation reported by non-participating senior centers was recruiting 18 study-eligible older adult participants. Indeed, even among participating

centers, this was one of the central challenges they identified in implementing the program. Some senior centers were concerned about getting 18 older adults to commit to a year-long intervention study while others were concerned about finding enough interested older adults who met the study eligibility criteria (e.g. BMI ≥ 30). Certainly, rigorous research designs require adequate numbers of participants to provide sufficient power to detect meaningful differences between experimental conditions, as well as stringent eligibility requirements to ensure individuals appropriate for the intervention(s) offered are enrolled. Thus, community-based research trials must balance the needs of study design with the realities experienced by community partners. Strong consideration of these likely challenges in frank discussions with community partners prior to finalizing the study design is warranted to minimize designing a study which is not tenable in the targeted community. It may be that study configuration would benefit from enrolling a greater number of sites with fewer individuals nested within each site. Once the study design is collaboratively finalized, it should be followed by thoughtful and explicit discussions of how researchers can assist community partners in recruiting adequate eligible participants to reach accrual goals. In sustained, non-research delivery of these interventions, having such an accrual goal might not be as critical. However, even in delivery outside of the context of a research study, a minimum number of consistently attending participants is important for the efficiency (and perhaps effectiveness) of intervention groups.

In addition, several of the non-participating senior centers expressed concern over the length of the program, indicating a shorter intervention would have facilitated their participation in the trial. There are compelling data that shorter lifestyle programs produce less favorable outcomes than do longer programs (Perri, Nezu, Patti, & McCann, 1989). Thus, the decision to maintain longer interventions might not be abandoned in total but might be balanced with community preferences. The implication of this finding is twofold. When designing health promotion programs for community adoption and delivery, the length of the intervention should be considered to minimize the burden it would place on potential participants at the delivery sites. For example, programs could be designed to be delivered in short bouts (e.g. six weeks) in which new participants as well as returning participants could both attend. However, the implication for health promotion research is that there is a need to develop and test the effects of novel approaches to program implementation that accommodate community needs. Only then will there be an adequate evidence-base that would justify broader community dissemination of the modified health promotion program.

Finally, a facilitator to participating in research was the idea that the research would produce a meaningful benefit to older adults specifically within the senior centers and that the results, once disseminated, could benefit older adults more broadly. Indeed such sentiment has been shown to be important for recruiting into community-based clinical trials (Dormandy et al., 2008). In community-based research site recruitment, it is recommended that researchers highlight the benefits of participation as a research site to the community-based organization and the individual members/clients. Surprisingly, there was only minimal concern expressed regarding the study requirement to accept randomized assignment to one of the two intervention arms, even though there was preference expressed for one of the interventions. Perhaps this lack of concern was due to the fact that we provided an opportunity at the end of the trial for all participating senior centers to receive intervention training and materials

on the intervention to which they were not randomized. This study design component was not expressly mentioned by those interviewed, but it may have served as a facilitator to participation by ensuring that all centers ultimately received the intervention they preferred.

Conclusions

In recent years, senior centers across the US have been expanding their array of activities and services, including health and wellness programs, to respond to the preferences and activity levels of older adults (Firman, 2010). Indeed, senior centers interviewed for this report indicated substantial interest in providing programs that were beneficial to and addressed the needs of their older adult members. However, the adoption of evidence-based health promotion programs into the community has been slow (Glasgow et al., 2003), suggesting the need for more translational research to test the effectiveness of university-based interventions delivered in community settings, like senior centers, under real-world conditions. We identified several barriers limiting senior center participation in this translational research, as well several facilitators to their participation. It remains to be seen if others find a similar pattern of barriers and facilitators in working with senior centers. Nonetheless, the overwhelming experience in this instance was that senior centers are eager to participate in translational research if researchers address the barriers encountered by community partners. Thus, senior centers should be considered for community-based effectiveness trials and other health promotion research targeting older adults, and investigators can contribute to this important research agenda by providing insights into the barriers and facilitators of engaging these important community collaborators.

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Biographies

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ShaRhonda J. Love, MPH, is a Research Project Director who works to direct and manage current research projects and provides administrative oversight, including oversight and

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Table 1

Characteristics and Initial Concerns of Participating and Non-Participating Senior Centers

	Participating Senior Centers	Non-Participating Senior Centers
Number of Senior Centers	16	34
Counties Covered	12	28
Average County Population	110,967	84,985
Average County Population 60 years +	21,802	14,957
Expressed Initial Concerns	6	31
Primary Initial Concerns About Participating*		
Getting LHEs	4	11
Getting 18 participants	1	14
LHEs education level	1	0
Randomization	0	4
Long-term participation	0	4
Competing demands/programs	1	6
Not specific	0	1
Training requirements (time)	0	1
Space for program	0	2

Source: Study Records, US Census Bureau 2005–09 American Community Survey.

*Senior centers could report more than one concern, so primary initial concerns will not total the number of senior centers.