Recruiting Community-Dwelling Elderly at Risk for Physical Disability Into Exercise Research

Marcia S. Marx, Jiska Cohen-Mansfield, and Jack M. Guralnik

The article describes the process of identifying 100 community-dwelling elderly adults at risk for physical disability, yet not functionally disabled, for participation in a research project to develop appropriate exercise programs for at-risk elderly. Over a period of 14 months, initial contact was made with 941 older adults, 11% of whom (101 people) were eligible for and willing to complete all stages of the study protocol. The most successful recruitment strategies were a mass mailing followed by a telephone call and advertising in a newspaper with a large circulation (rather than a local paper). Aspects of the recruitment and retention of study participants are discussed.

Key Words: recruitment strategies, participant retention, geriatric, physically frail

Recruitment of appropriate study participants is a challenge in any research project. In a review article of recruitment research for controlled clinical trials published through 1995, Lovato, Hill, Hertert, Hunninghake, and Probstfield (1997) reported that although some studies have been successful in recruiting within their original time line and budget, it is more often the case that studies report the need to extend the recruitment period or increase effort and cost. For instance, it was necessary to extend the planned 2-year recruitment period of the Systolic Hypertension in the Elderly Program by 9 months to achieve the required sample size (Cosgrove et al., 1999).

The challenges of recruiting are increased in gerontological research because of age stipulations. Furthermore, recruitment and enrollment in many studies of the elderly become difficult when eligibility is restricted by the research question and the accompanying research design (Patrick, Pruchno, & Rose, 1998). For instance, Dowling and Wiener (1997) described an exhaustive 3-year recruitment process for a study of sleep disruption in Alzheimer’s disease that yielded an enrollment of only 63 people out of a potential participant pool of approximately 75,000. Schernitzauer et al. (1998) found the process of recruiting older adults with bereavement-related depression for clinical-trial testing to be a long and arduous one. Over a 5-year period, they mailed 3,906 letters yet were able to screen only 441 people and finally

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enroll a total of only 65 (an intake rate of about 1 person per month over 5 years). Recently, the recruitment of nursing-home residents with Alzheimer’s disease for a pharmacological study resulted in the inclusion of only 5 out of the 457 residents initially considered (1.1%), and the appropriateness of 1 of the 5 was subsequently questioned because of a medical condition (Cohen-Mansfield, 2003). This low recruitment rate was a direct result of rigid exclusion criteria accompanied by a high refusal rate from family members. Reluctance to provide consent for study participation is another stumbling block for gerontological recruitment (Warren et al., 1986).

Despite the factors that hamper efforts to recruit elderly participants, some researchers have reported recruitment success through the following strategies: screening participants during office visits to primary-care physicians (Gill, McGloin, Gahbauer, Shepard, & Bianco, 2001), referrals from geriatric-assessment units (Adams, Silverman, Musa, & Peele, 1997), identifying people from patient rosters of primary-care physicians (Gill et al., 2001; Hall, 1993) or from a registry for a specific disease (Newcomb, Love, Phillips, & Buckmaster, 1990), media campaigns (Anderson, Fogler, & Dedrick, 1995; Hall; Patrick et al., 1998), presentations to senior centers and senior housing (Adams et al.), mass mailing (Cosgrove et al., 1999; Kuller, 1993), direct mailing followed up by a phone call (Boult, Boult, Morishita, & Pirie, 1998; Ives, Kuller, Schulz, Traven, & Lave, 1992; Taylor-Davis, Smiciklas-Wright, Davis, Jensen, & Mitchell, 1998), and the use of experienced recruitment coordinators (Cosgrove et al.; Petrovitch et al., 1991). A most impressive recruitment rate was obtained in a study designed to identify predictors of nonresponse in 130 community-dwelling adults age 75 years and older. In that study, Norton, Breitner, Welsh, and Wyse (1994) achieved a participation rate of 63% (82/130) after the initial stage of recruitment (employing a letter and a follow-up phone call) and a final rate of 93% (119/128) when the initial nonresponders were later personally visited at their homes (breakdown of the 41 initial nonresponders who were visited at home: 37 agreed to participate, 9 refused, and 2 had died). Patrick et al., who employed a variety of recruitment strategies to obtain appropriate elderly participants for research, have suggested that research studies might benefit by including a variety of recruitment strategies from the onset of the project.

With the lessons learned from previous researchers in mind, we initiated the present study. Our challenge was to recruit and retain elderly community-dwelling adults who were currently nondisabled but were at risk for future physical disability for a study designed to determine specific physical impairments that would restrict ability to participate in an exercise program. Because of monetary limitations, we were restricted with regard to geographic area. Moreover, we were restricted by eligibility requirements that spanned successive stages of the project. At the first stage, it was necessary for participants to meet specific criteria pertaining to age, physical ability, and exercise regimen in order to be eligible for the next stage. At Stage 2, it was necessary for them to demonstrate a high risk of physical disability on a summary measure of lower extremity function (Guralnik, Ferrucci, Simonsick, Salive, & Wallace, 1995; Guralnik et al., 1994, 2000) in order to be eligible to continue to the third and final stage. In order to complete Stage 3, it was necessary for participants to travel to our test site and undergo a 1-hr evaluation by a licensed physical therapist who evaluated physical impairment and whether or not the impairment would limit taking part in an exercise program.
In this article, we describe the recruitment sources that provided 941 possible study participants during our 14-month recruitment process. We also discuss how the 941 fared across the successive stages of the project, ultimately yielding our target goal of 100 elderly participants who completed all three stages of the study protocol.

Methods

PROCEDURE

All data were obtained as a part of the Hebrew Home Study of Impairments and Exercise (HHS). In this article, we present findings pertaining to the initial contact and recruitment of community-dwelling elderly adults at risk for physical disability.

Recruitment involved a three-stage process. In the first stage, a trained research assistant asked potential study participants a few questions during a short telephone interview. It was necessary for participants to meet these criteria: age between 75 and 84 years, living in the community (rather than a nursing home), able to walk 2–3 blocks without help, able to walk up and down stairs without help, able to walk without a walker, and not having engaged in strenuous sports or recreational activities (e.g., jogging, tennis, aerobic dance) over the preceding 7 days. Participants who were eligible after the telephone interview were encouraged to move to the next stage.

In the second stage, participants completed a comprehensive 27-page questionnaire that included items pertaining to demographics and medical history, as well as exercise habits and attitudes. In addition, cognitive status of the participants was assessed via the Mini-Mental State Examination (Folstein, Folstein, & McHugh, 1975), and only those scoring above 18 were eligible to continue to the third stage. During Stage 2, lower extremity function was assessed by measures of standing balance, walking speed, and ability to rise from a chair, as described elsewhere (Guralnik et al., 1994, 1995). Trained research assistants carried out assessments in the participants’ homes or at the Research Institute on Aging at the Hebrew Home of Greater Washington. Because summary scores of lower extremity function in the range of 4 to 9 have been shown to predict subsequent disability (Guralnik et al., 1995, 2000), participants had to receive a summary score from 4 to 9 in order to be eligible to continue to Stage 3.

The third stage involved an extensive evaluation for exercise readiness by a licensed physical therapist, which was conducted at the Hebrew Home of Greater Washington. The physical therapy evaluation, which was developed specifically for the HHS to provide exercise recommendations for participants, included objective assessments of gait, balance, muscle strength, and range of motion. After completing all three stages of the study, each participant was sent a thank-you letter and a complementary book titled Exercise: A Guide From the National Institute on Aging.

RECRUITMENT PROCESS

A variety of recruitment strategies were employed. These included contacting sites that typically have large numbers of older adults (e.g., senior apartment buildings, senior centers) and distributing flyers, newspaper advertising, a calling list, a
mailing list, and a mass mailing with a follow-up telephone call. For the sites to which flyers were sent, we first contacted an administrator and then sent a brief written description of the project, as well as flyers for distribution. For two strategies (the calling list and follow-up calls to the mass mailing), initial contact was made with potential participants in the form of a telephone call from a trained research assistant; for the other strategies it was necessary for potential participants to call the HHS test site to express interest in participating.

Six months into the recruitment process, it became evident that although these people had some degree of functional limitation, our subject pool did not consist of people who were at the greatest risk for physical disability. The recruitment flyer was therefore revised in order to capture a more frail elderly population by adding the following: “Are you having more difficulty doing your daily activities than previously?” and “Your help is needed.” In this article, we refer to the two recruitment periods as Wave 1 and Wave 2. We made initial contact with a total of 941 people—400 during Wave 1 (July 13, 1999, to January 15, 2000) and 541 during Wave 2 (January 16, 2000, to September 18, 2000).

RECRUITMENT SOURCES

Senior Apartment Buildings. These sites participated by distributing or posting flyers for their residents. Six facilities participated in Wave 1, 12 participated in Wave 2, and 3 participated in both Wave 1 and Wave 2. In addition, some of the facilities wrote about the project in their newsletters, two included flyers at large health festivals, and one posted information on its in-house television channel (at this site, we also offered a $5 gift certificate to a local supermarket as an incentive for participation). The total number of people who responded from this source was 65 (57 during Wave 1, 8 during Wave 2).

Senior Centers and Other Groups With Senior Programming. This category includes senior centers, as well as clubs (e.g., a weekly men’s group) and community groups (e.g., Institute for Learning in Retirement, the Vietnamese Senior Association of MD, Inc.). A total of 18 sources posted flyers—3 during Wave 1 and 11 during Wave 2—and the 4 largest senior centers in the area participated during both Wave 1 and Wave 2. Initial contact was made with 19 people during Wave 1 and 9 during Wave 2, yielding a total of 28 people from this recruitment source.

Medical Professionals. This source is made up of people whose practices include elderly adults. Five sources (a geriatrician, a general practitioner, a physical therapist, a podiatrist, and an ophthalmology practice) displayed our flyer in only Wave 1, and two (both were geriatric health centers) displayed it in both Wave 1 and Wave 2. This recruitment source produced 23 people (19 during Wave 1 and 4 during Wave 2).

Newspapers and Other Media. This source includes both articles describing the research study and paid advertisements requesting volunteers. We worked with five local newspapers during Wave 1 and one cable television channel during Wave 2. An advertisement was placed in the Washington Post during both Wave 1 and Wave 2. We received telephone calls from 54 people (41 during Wave 1 and 13 during Wave 2). More than half of these people contacted us after seeing our advertisement in the Volunteer section of the Washington Post; specifically, 17 people responded to the advertisement that was run during Wave 1 and 11 to the advertisement that was run during Wave 2.
Telephone List of Senior Volunteers. We received, at no charge, a telephone list of 116 elderly volunteers at a large nonprofit long-term-care facility, all of whom were called during Wave 1.

Mailing List From a Local Community Center. We obtained a mailing list of 915 members of a local community center (located on the same campus as the test site). All were between the ages of 75 and 84 years. A flyer was mailed to all names on the list. Follow-up telephone calls were not possible, because telephone numbers were not supplied with the list. One hundred people from the mailing list responded to our flyer (a response rate of 10.9%) during Wave 1.

Friends. This source included friends of the researchers and acquaintances of study participants (i.e., snowball referrals). Initial contact was made with 20 people from this source, 16 during Wave 1 and 4 during Wave 2.

Other. A total of 40 people called in response to our flyer (32 during Wave 1 and 8 during Wave 2) but were unable to recall where they had seen it. Flyers had been left at local markets, libraries, and churches, and some people in this category could have picked up a flyer at any of those locations. It is also possible that people had gotten the flyer from one of the previously mentioned sources.

Three-ZIP-Code Mailing/Telephone List. During Wave 2, we purchased a mailing list of 1,906 households with people between the ages of 75 and 84 years who lived within three ZIP codes close to the study site. First we cross-checked this list with our group of people already screened and eliminated those households from the mailing list (n = 26). We then randomly selected 1,800 households and sent a recruitment flyer to each in the mail. Three hundred flyers offered a free $1 lottery ticket for participating in the project, 300 offered a free $5 gift certificate to a local supermarket for participating, and the other 1,200 flyers contained no offer of compensation.

Twenty-seven people called us in response to a flyer. Specifically, 7 called in response to the flyer offering the supermarket gift certificate (2.3%; 7/300), 5 in response to the flyer offering a free lottery ticket (1.7%; 5/300), and 15 in response to the flyer that did not offer compensation (1.25%; 15/1200—4 of these 15 did not fill out the telephone screening questionnaire: One refused to participate and the ages of 3 did not fall within the eligibility range). A total of 79 flyers were returned by the post office, indicating that the addressee had moved or died.

We followed up with a phone call to 389 of the nonresponding households to which we had sent the flyer that offered no compensation. Of these, 64 households were recruited (n = 65; 2 people were recruited from the same household), 117 people refused to participate, the ages of 18 fell outside of the age specifications, 7 did not speak English, 1 was in the hospital, and 182 could not be reached (the phone number was wrong, the phone was out of order, or there was no answer). We stopped calling once we reached our target number of participants, although there were 1,305 households on the list that had already received a flyer and could still have been contacted.

Results

RECRUITMENT OUTCOMES

Our recruitment process was successful in that we achieved our target goal of 100 study participants. Out of a possible 941 people 101 between the ages of 75 and 84
years were eligible for and completed all three stages of the project (roughly 1 in every 9 people, or 11%).

In Table 1, we show how the 941 people fared at successive stages of the project. As can be seen from the bottom row, 230 (24%) were eligible after the short telephone interview; of these, 111 were still eligible after the test of lower body function. Of the 111 people eligible for Stage 3 (the physical therapy evaluation performed at the HHS test site), 101 completed that stage and 10 did not. The reasons for dropping out before Stage 3 were health problems ("n = 4) and no longer being interested in participating ("n = 6).

Also shown in Table 1 is a breakdown of response rates at each stage for each of the recruitment sources. The recruitment sources with higher percentages of participants who completed all three stages of the project (as a percentage of possible participants for screening) were friends, media, and senior apartment buildings; the physical therapy evaluation was completed for 35%, 31%, and 29% of the people recruited from each source, respectively. These statistics are misleading, however. Although the recruitment source of friends had the highest percentage, this source added only 7 participants to the final count of 101. The three recruitment sources that yielded the greatest number of people who completed all three stages were the mailing list from the local community center ("n = 20), the three-ZIP-code mailing/telephone list ("n = 20), and senior apartment buildings ("n = 19; see the last column of Table 1). These data demonstrate the usefulness of large mailing and telephone lists as recruitment strategies.

We took a closer look at the 88 people who were recruited through the three-ZIP-code mailing/telephone list (see Table 2; note that this table includes only those who completed the short telephone interview). It can be seen from the table that we recruited a greater number of people when we called them ("n = 65) than when they called us ("n = 23, sum of the first three rows of Column 2). As for the people who called us, it appears that offering an enticement was a more effective incentive for getting people to contact us than was sending a flyer that offered no compensation. Specifically, 12 out of 600 people (2%) responded to an enticement (7 people to the supermarket gift certificate and 5 to the lottery ticket), in comparison with 11 out of 1,200 people (0.9%) who called even though no monetary reward was offered (when we consider these 11 people plus 4 others who called us but were not recruited, the rate becomes 1.25%). It can be seen in Table 2 that the recruitment strategy that yielded the greatest number of people who completed the physical therapy evaluation ("n = 13) was calling the participants.

For most of our recruitment sources, there was no way to determine how many people had seen our flyer (e.g., flyers displayed in a physician’s office, a library, or a senior center) or advertisement (in the Washington Post). For some sources, however, we knew the exact number of people that we had attempted to recruit. These sources were a senior apartment dwelling ("n = 278, all of whom were offered a free gift certificate to a local supermarket for participating), the local community-center mailing list ("n = 915), and the people from the three-ZIP-code mailing list, who were offered a supermarket gift certificate ("n = 300), a free lottery ticket ("n = 300), or no monetary enticement ("n = 1,200). We calculated the percentage of people recruited from each of these sources, and the results are presented in Table 3. It is noteworthy that the two highest percentages of people who called us were from one site that offered an enticement (the senior apartment dwelling: 10.8%) and
Table 1  Response Rates at Successive Screening Stages for the Recruitment Sources

<table>
<thead>
<tr>
<th>Recruitment source</th>
<th>Number of potential participants for screening (those who responded to us or whom we attempted to contact by phone)</th>
<th>% of possible participants who passed the phone screening and performed the summary measure of lower body function</th>
<th>% of those who performed the summary measure of lower body function and received a score from 4 to 9</th>
<th>% of those who scored 4–9 on the summary measure and completed Stage 3 (physical therapy evaluation)</th>
<th>Overall % of possible participants for screening who completed all 3 stages of project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior apartment buildings</td>
<td>65</td>
<td>55 (36/65)</td>
<td>56 (20/36)</td>
<td>95 (19/20)</td>
<td>29 (19/65)</td>
</tr>
<tr>
<td>Community-center mailing list</td>
<td>100</td>
<td>42 (42/100)</td>
<td>52 (22/42)</td>
<td>91 (20/22)</td>
<td>20 (20/100)</td>
</tr>
<tr>
<td>Media</td>
<td>54</td>
<td>80 (43/54)</td>
<td>44 (19/43)</td>
<td>89 (17/19)</td>
<td>31 (17/54)</td>
</tr>
<tr>
<td>Medical professionals</td>
<td>23</td>
<td>26 (6/23)</td>
<td>66 (4/6)</td>
<td>100 (4/4)</td>
<td>17 (4/23)</td>
</tr>
<tr>
<td>Senior centers</td>
<td>28</td>
<td>64 (18/28)</td>
<td>33 (6/18)</td>
<td>100 (6/6)</td>
<td>21 (6/28)</td>
</tr>
<tr>
<td>Telephone list</td>
<td>116</td>
<td>10 (12/116)</td>
<td>33 (4/12)</td>
<td>75 (3/4)</td>
<td>3 (3/116)</td>
</tr>
<tr>
<td>Friends</td>
<td>20</td>
<td>60 (12/20)</td>
<td>58 (7/12)</td>
<td>100 (7/7)</td>
<td>35 (7/20)</td>
</tr>
<tr>
<td>Other</td>
<td>40</td>
<td>48 (19/40)</td>
<td>37 (7/19)</td>
<td>71 (5/7)</td>
<td>13 (5/40)</td>
</tr>
<tr>
<td>3-ZIP-code mailing/telephone list</td>
<td>495</td>
<td>8 (42/495)</td>
<td>52 (22/42)</td>
<td>91 (20/22)</td>
<td>4 (20/495)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>941</strong></td>
<td><strong>24 (230/941)</strong></td>
<td><strong>48 (111/230)</strong></td>
<td><strong>91 (101/111)</strong></td>
<td><strong>11 (101/941)</strong></td>
</tr>
</tbody>
</table>
Table 2  The Three-ZIP-Code Mailing/Telephone List: Recruitment Strategies and Corresponding Response Rates at Each Stage

<table>
<thead>
<tr>
<th>Recruitment source</th>
<th>Number of respondents</th>
<th>% of respondents eligible after phone screening</th>
<th>% of those who passed the phone screening who were still eligible after the test of lower body function</th>
<th>% of those who were eligible after the test of lower body function who completed the physical therapy evaluation</th>
<th>Overall % of those who completed all 3 stages of the project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant called to get supermarket gift certificate</td>
<td>7</td>
<td>43 (3/7)</td>
<td>67 (2/3)</td>
<td>100 (2/2)</td>
<td>29 (2/7)</td>
</tr>
<tr>
<td>Participant called to get a free lottery ticket</td>
<td>5</td>
<td>20 (1/5)</td>
<td>100 (1/1)</td>
<td>100 (1/1)</td>
<td>20 (1/5)</td>
</tr>
<tr>
<td>Participant called without any enticement</td>
<td>11</td>
<td>73 (8/11)</td>
<td>50 (4/8)</td>
<td>100 (4/4)</td>
<td>36 (4/11)</td>
</tr>
<tr>
<td>We called participant</td>
<td>65</td>
<td>43 (28/65)</td>
<td>54 (15/28)</td>
<td>87 (13/15)</td>
<td>20 (13/65)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>88</strong></td>
<td><strong>48 (42/88)</strong></td>
<td><strong>52 (22/42)</strong></td>
<td><strong>91 (20/22)</strong></td>
<td><strong>23 (20/88)</strong></td>
</tr>
</tbody>
</table>
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one that did not (community-center mailing list: 10.9%). It is conceivable that we obtained the high percentage from the community-center mailing list because this source is made up of people who often volunteer their time. It is also possible that the high percentages from these sources result from the fact that both are on the same campus as the project test site. When we compared these data with the recruitment percentage of 16.5% obtained when we called people from the three-ZIP-code list (64 out of 389 households), it is clear that a mass mailing followed up by a telephone call was our most successful, although costly, recruitment strategy. Perhaps the recruitment percentage would have been even higher if we had offered an enticement when we called.

WAVE 1 VERSUS WAVE 2

As the project progressed, we realized that the summary scores for lower extremity function of the participants who were eligible for Stage 3 tended to be skewed toward 9 rather than 4. In order to tap a more frail population, we revised the recruitment flyer and began Wave 2. Regardless of the recruitment strategy employed, we found it very difficult to recruit participants who would go on to receive a summary score of 4 or 5. The percentage of participants with summary scores of 4 or 5 was higher for Wave 2 than Wave 1, however, suggesting that the revised flyer used in Wave 2 might have been more successful in tapping a frailer group of participants (see Table 4). Of course, differences in recruitment methods for the two waves preclude a definite conclusion concerning this issue.

The data presented in Table 4, which show that the summary scores were skewed toward the higher values for both Wave 1 and Wave 2, are remarkably similar to the distribution reported by Guralnik et al. (1995), whose study included data from 1,122 community-dwelling participants age 71 years or older who reported no disability in activities of daily living and were able to walk half a mile and climb stairs without assistance. These similar results led us to feel confident that we were successful in recruiting elderly people who are representative of the community-dwelling population for the present project.

Table 3 Percentages (and Counts) of People Who Called in Response to a Flyer

<table>
<thead>
<tr>
<th>Recruitment source</th>
<th>Percentage who responded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior apartment dwelling</td>
<td>10.8 (30/278)</td>
</tr>
<tr>
<td>Community-center mailing list</td>
<td>10.9 (100/915)</td>
</tr>
<tr>
<td>3-ZIP-code mailing list</td>
<td></td>
</tr>
<tr>
<td>supermarket gift certificate</td>
<td>2.3 (7/300)</td>
</tr>
<tr>
<td>lottery ticket</td>
<td>1.7 (5/300)</td>
</tr>
<tr>
<td>no enticement</td>
<td>1.25 (15/1200)</td>
</tr>
</tbody>
</table>
Over a recruitment period of 14 months, we found 101 community-dwelling elderly adults (11% of 941 possible study participants) who were eligible for and willing to complete all stages of the HHS protocol. Based on our experiences with this project, we recommend that future recruitment projects use a mass mailing followed by a telephone call, along with an advertisement in a widely read newspaper (rather than a local newspaper). Other researchers have previously recommended the use of a mailing plus follow-up call (Ives et al., 1992) and media advertisements (Dowling & Wiener, 1997; Schlernitzauer et al., 1998). Lovato et al. (1997), after reviewing the recruitment literature, reported that both the efficiency and the effectiveness of mass mailing have been shown to improve by adding personalized letters, follow-up telephone calls, and a coordinated media campaign. To further improve effectiveness, we suggest that future studies include monetary enticements as a part of the mass mailing/phone-call recruitment strategy if the budget allows. Although our numbers are small, we found that more people in our mass mailing responded to the flyer when we offered either a free lottery ticket or a supermarket gift certificate than when we offered nothing. Also, Boult et al. (1998), in a recruitment study of Medicare beneficiaries, found that their response rate increased when a new $1 bill was added to the mailing packet.

We also found that recruitment via a large list takes a great deal of time and patience. During Wave 2 we mailed flyers to a total of 1,800 households. Seventy-nine flyers were returned to us by the post office, and we received calls from only 27 people. When we followed up by telephone to 389 of the nonresponding households (usually with more than one call per household), we found that 47% (182/389) were unreachable, 30% (117/389) refused to participate, the ages of 5% (18/389) fell outside of our age specifications, 2% (7/389) did not speak English, and 1 person was in the hospital. A similar scenario has been reported earlier: In a study in which the names of 1,300 elderly adults were drawn from a patient database, 17% (n = 223) were unreachable (84 had an incorrect phone number, 24 were deceased, and 115 were never reached; Taylor-Davis et al., 1998).

Although participants were eliminated at successive stages of our study because they failed to meet study criteria, we also lost participants because of dropout. At the most critical point of the study protocol, we lost 10 participants (i.e.,
those who were eligible to proceed to the stage of physical therapy evaluation but chose to drop out), despite our making multiple efforts to encourage them to continue with the study. Reasons for dropout included health problems and no longer being interested in participating. Retention of participants is a concern in any study. In a study of college students, Sarkin, Marshall, Larson, Calfas, and Sallis (1998) found that the most common reasons for dropping out of the study after completing the baseline assessments were time, schedule conflicts, not interested, and no reason given. Boult et al. (1998) found that 16% of the people in the experimental group of their study dropped out before completing the enrollment process, primarily because they were reluctant to complete the required home and clinic visits.

Because many older adults have stopped driving or are widowed, they tend to drop out of clinical trials (or fail to be recruited) unless transportation to and from the study site is provided (Adams et al., 1997; Anderson et al., 1995; Boult et al., 1998; McNeely & Clements, 1994; Petrovitch et al., 1991). In a report of recruitment of people age 60–74 years into a home-based-education study, Taylor-Davis et al. (1998) achieved a recruitment rate of 45% and suggested that one reason for their success was that participation did not involve travel. In the present study, 10 participants who ultimately completed all stages of the HHS protocol would not have done so if we had not arranged for their transportation to and from the HHS test site.

We found retention of participants to be challenging through all stages of the project. In addition to transportation difficulties, many participants were unable to complete the 27-page questionnaire by themselves. We solved this problem by having a research assistant read the questions aloud to the participant and then record the participant’s verbal responses. This was time-consuming but necessary. Had we not done this, we would have lost these participants. Sensory changes and diminution of physical and cognitive abilities have previously been cited as conditions that interfere with not only recruitment but also retention of elderly participants (McNeely & Clements, 1994). Clearly, the retention of elderly study participants is a topic that needs further research.

Although we were successful in recruiting a more frail population by revising the flyer for Wave 2, the summary scores of lower extremity function, in general, were skewed toward the higher rather than lower values. There are several reasons that might explain why we encountered difficulty in recruiting the frailest elderly. First, because of monetary and time constraints, we concentrated on a small geographic area. Expanding our boundaries might have yielded a more diverse subject pool. The second reason, as can be seen from examining the community survey of Guralnik et al. (1995), is that the pattern we saw does reflect community-dwelling elderly. In other words, community-dwelling adults might not be the type of people who would receive a summary score of 4. The third reason might be the eligibility requirements of this project. Our goal was to recruit nondisabled but functionally impaired participants. People were excluded if they were not between the ages of 75 and 84 years, they were not able to walk 2–3 blocks without help, they were not able to walk up and down stairs to the second floor without help, or they used a walker. Finally, frailty and its consequences are constant sources of concern and worry for older adults, and they might be unwilling to participate in a project that focuses on this topic.
The literature contains many references to the time-consuming and labor-intensive nature of recruitment and retention, and the present study is no exception. At the onset we expected to complete the project in 6–8 months and confidently launched our flyer campaign to senior apartment dwellings. We anticipated that we would obtain half of the participants who would go on to complete Stage 3 from the first senior apartment building that we approached because we have worked with these seniors on previous projects. Only 30 of the possible 278 tenants of this building responded to our flyer, however, despite our offering a gift certificate to a local supermarket as an enticement. (Of these 30 people, only 11 completed the final stage of the project.) At that point, we expanded our flyer campaign to include more sources (e.g., senior centers, senior clubs, medical professionals, churches, libraries, markets). A great amount of time was spent contacting sites for potential participants (in person, by phone, or using e-mail) and then following up with a written description of the project and flyers for distribution. At the same time, we recruited through media, a telephone list of senior volunteers, and a mailing list from a local community center. Finally, we purchased the large three-ZIP-code mailing/telephone list during the tenth month of this project. On the basis of our experience, as well as that of others, we believe that it is time not only for researchers to address recruitment and retention issues when writing grant proposals but also for granting agencies to acknowledge the necessity of including the high costs of recruitment in the budget.

References


