

Where Have They Gone? Recruiting and Retaining Older Rural Research Participants

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Abstract

Issue: Rural-dwelling elderly have been shown to suffer from health disparities when compared to the general population. Research involving these individuals is important, and to have meaningful results, sample sizes must be adequate. Recruiting and retaining these individuals pose significant challenges.

Context: Nurse researchers in the rural northwestern United States conducted a 4-part educational intervention aimed at increasing general and complementary and alternative health care literacy of older rural dwellers. Significant challenges were faced in both recruiting and retaining participants over the 6-month study period. Despite careful planning and community selection, the team had to double the number of communities in which they carried out the project to meet recruitment goals. Retention was also a challenge. Of 127 participants initially enrolled in the study, only 52 remained to the end.

Lessons Learned: Challenges of recruiting and retaining are complex and compounded when the target population is rural, older and the study is longitudinal. Recruitment challenges included

reaching older adults, offering a compelling program, and offering it in an acceptable format at a convenient time and place. A variety of outreach activities were conducted including in-person presentations, advertising or public interest stories in local newspapers or radio stations, and flyers on bulletin boards in restaurants, clinics, churches, community centers, and libraries. A project champion, an individual well known and connected within the community and committed to the success of the proposed study, is a major asset. Retention strategies included developing relationships with the participants and maintaining contact with them over the course of the study through such mechanisms as appointment cards, e-mail or regular mail, telephone reminders, and thank you cards. Oversampling was important as factors beyond the control of the researcher occurred; for example, illness, death, family crises, unexpected relocations, and weather events that prevented travel to scheduled research events.

Keywords: complementary health, health literacy, participant retention, sampling

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Research, with any population, requires adequate samples to determine if findings are truly based on the intervention, or if they are due to chance. Further, funding agencies are increasingly concerned about the adequacy of sample sizes involved in research projects as they seek to ensure that funds are being spent on projects with potential to provide significant information. The importance of sample size is a concern for researchers, and it is even coming to the fore in nursing literature aimed at staff nurses (Fowler & Lapp, 2019). Participant recruitment is often challenging, depending upon the specific research question and the target population. Approximately 19.3% of Americans live in rural or frontier areas (National Rural Health Association, 2020). Health research with rural participants is important as rural dwellers have significant health disparities

when compared to their urban counterparts; they have less access to health care, tend to be older, and have more chronic illnesses (Long et al., 2018; National Rural Health Association, 2020; Pew Research Center, 2018.) Historically, rural dwellers have also been shown to be more independent in their health care decision-making using home remedies and traditional therapies for health promotion and self-management of their health problems (Altizer et al., 2013; Arcury et al., 2015; Quandt et al., 2015).

Conducting research with rural populations offers several additional challenges because of the nature of rural communities as they are small, tend to have fewer resources, and the inhabitants are spread out over significant distances. A number of strategies have been suggested to recruit rural residents into health-related research projects (Anuruang et al., 2014; Cudney et al., 2004; Mitchell et al., 2001), yet the problems of recruitment and retention continue to offer challenges to researchers. Obtaining, and if the project is one that occurs over time, retaining, an adequate sample is a significant challenge. The purpose of this paper is to discuss the realities of recruitment and retention of older adult participants in research conducted in sparsely populated rural communities.

A Case Study

A research project conducted in the rural Intermountain West provides an opportunity to examine factors that affected recruitment and retention of elderly, rural-dwelling individuals. A four-part skill-building educational intervention designed to enhance the general health literacy and literacy about complementary and alternative health (CAM) amongst older rural-dwelling individuals was conducted over a seven-week period. A before and after design was used with three data collection points: pre- and post-intervention and a follow up questionnaire five months

later. The program sessions were approximately one hour in length and offered every other week. Program content focused on information needed when considering CAM, skills to evaluate that information, partnering with health care providers, and the importance of health literacy (Shreffler-Grant et al., 2020; Weinert et al., 2020). The initial research plan was to recruit and retain 120 individuals from four rural communities with the hope of retaining 80 for the duration of the study. The study was conducted by a team of three nurse researchers and carried out in rural communities in the north-western quadrant of the United States. The study was approved by the Montana State University Institutional Review Board for the Protection of Human Subjects. For this study the research team defined rural as a state or region with a population density of less than 11 persons per square mile and an economy centered on agriculture (ranching, farming, timber), extractive industries (oil, gas, mining), and tourism (fishing, hunting, outdoor activities) (Cromartie & Bucholtz, 2008). Further, targeted rural communities were those in Montana with populations of less than 10,000 and not adjacent to a metropolitan area.

Recruitment Strategies

The project had several levels of recruitment: community, delivery site, and participants. Census data and state Office on Aging data were used to identify potential communities. The biggest challenge in community identification was finding truly rural communities large enough to have a busy senior center or other location where seniors congregate such as congregate living centers. The number of meals served each week was used as an indicator of activity for senior centers, and facility size for living centers. The populations of the four original communities ranged from approximately 4,200 to 7,400. The additional communities ranged from 2,600 population to 72,000 (two sites in this community) and one community of 30,000. These last two

communities were selected because of accessibility and presence of senior congregate facilities and for the study to be completed within the allocated time and budget.

After potential communities were identified, personal visits and telephone conversations with community leaders and senior center directors were held to make the final selections. Site selection was based on having the necessary meeting space, a clientele likely to be interested in the program, and availability on the calendar for the program. These site visits were also used to gauge the interest of the center director in serving as a champion for the project and of the members of the community in the topic of presentation. There was grant funding to provide a computer and projection equipment to the initial sites as an incentive for the facility to participate and funds for a small honorarium for the site champion. When it was evident that the project had to involve more than four communities to recruit a sufficient number of participants, the additional sites participated without any incentive, other than the availability of the program to their older adult members or residents. This suggests that compensation was not a major factor in site recruitment.

Once a community had been selected and a schedule for the program set, numerous methods were utilized in each community to promote local visibility and interest: flyers throughout the community, in such places as restaurants, library, and church bulletin boards, announcements at the senior center or congregate living site, and articles in local newspapers. The timing of the intervention was planned to encourage participation, e.g. avoiding busy times of the year, planning short sessions immediately after congregate meals. The plan was to recruit project champions to promote the study. Project champions are individuals who are well known and connected within the community and committed to the success of the proposed study. These individuals actively recruit participants, announce project events, and sustain interest and participation throughout the

study. This was successful in a few communities; however, most champions did not function as envisioned.

Recruitment activities in the first four communities were successful in enrolling 73 participants, a number short of the target of 120 participants. In response to this shortfall, four additional communities were recruited. The recruitment activities identified above were repeated in these additional communities and were moderately successful as can be seen by the total number of participants displayed in Table 1 (N=127) who completed the Time 1 questionnaire. Of this 127, only 67 completed the Time 2 questionnaire administered at the end of the fourth educational session.

Table 1

Participant Enrollment and Retention by Site.

| Site Type | Time 1 | Time 2 | Time 3 |
|------------------|--------|------------|----------|
| 1 Living Center* | 20 | 14 | 10 |
| 2 Senior Center* | 29 | 14 | 11 |
| 3 Senior Center* | 12 | 6 | 4 |
| 4 Senior Center* | 12 | 5 | 4 |
| 5 Senior Center | 6 | 3 | 2 |
| 6 Senior Center | 16 | 5 | 4 |
| 7 Living Center | 12 | 10 | 8 |
| 8 Senior Center | 20 | 10 | 9 |
| Total | 127 | 67 / 52.7% | 52/40.9% |

**original sites*

Fifty-two participants, or 40.9% of the initial 127, remained throughout the study and completed the Time 3 questionnaire. While initial recruitment was a challenge, retention posed a greater challenge.

Retention Strategies

Retention is as important as recruitment, particularly for intervention studies such as this one. For example, if the participants that drop out of a study constitute a particular group, such as race, age, health status, it might have implications for the validity of the study findings. The average attrition rate (the obverse of retention) for clinical trials is 30% (Nuttall, 2012). The attrition rate for this study was 59.1%, well above the average. Analysis of the demographic characteristics of those who remained in the study and those who dropped out showed that there were no significant differences between the two groups (Shreffler-Grant et al, op cit.). This is a positive finding for this study, but attrition/retention continues to be a concern.

A multi-part intervention in far flung rural communities requires significant commitment by the participants, as well as adequate financing and significant time of the researchers. The program sessions were scheduled every other week spanning seven weeks. To the extent possible, the program was scheduled with consideration given to factors such as likelihood of weather events, holidays, and individual community and rural schedules of planting, harvesting, and vacation times. The center directors were consulted to avoid conflicting with regular center activities. To make the program as appealing and convenient as possible, the intervention sessions were offered right after the congregate lunch time, thus eliminating the need for repeated driving trips for the participants. At the first meeting, participants were asked to provide an e-mail address

or phone number so that the team could send Thank You notes, remind them of upcoming sessions, and alert them to the Time 3 data collection. Some champions contacted participants to remind them of upcoming sessions; for example, notes under doors in congregate living facilities, notes on bulletin boards, or individual personal reminders. In some communities, however, the champions did not carry out the role as envisioned.

Factors that affected attendance at the individual sessions included inclement weather, doctor's appointments, illnesses of the participant or spouse, death and funeral of a prominent community member, and arrival of unexpected guests. For example, in one community with few medical specialists, once a month a van conveyed individuals to the larger medical community 64 miles away. The monthly trip fell on the day of the third intervention session, and pulled several participants away. Some participants simply forgot. In another community, the illness and death of a participant excluded both him and his wife from the study. The team had anticipated some of these and so oversampled, but could not predict the multiple factors that impacted retention.

To promote completion of the Time 3 questionnaire, approximately 1 month in advance of the mailing, a letter was sent to all participants who had completed both the Time 1 and Time 2 questionnaires. This letter was to alert them to expect the last questionnaire and to encourage them to use the skills and tools given during the program. Telephone calls were tried initially, but few people answered their telephones. When possible, voice mail messages were left, but many did not have activated voice mail systems thus the main reminder communication was by mail. The Time 3 questionnaire was mailed out approximately one month after the reminder letters. The Time 3 mailing included a cover letter, the Time 3 questionnaire, and a stamped, return addressed envelope. If it was not returned within two weeks, a postcard was sent urging the individual to

complete the questionnaire, or, if they had lost it, to request a new one. If there was no response after an additional two weeks, a second Time 3 questionnaire and letter were sent. These activities did result in additional responses.

Challenges to obtaining Time 3 questionnaires included incorrect or incomplete addresses, or participants who had moved and not provided forwarding addresses. One participant died before the Time 3 questionnaires were distributed. One project champion was helpful in tracking down correct addresses. Through this help, and some persistent Internet work on the part of the investigators, all but two were located and completed the Time 3 questionnaire. The overall result was a 77.6% retention from Time 2 to Time 3. The final number of participants was short of the team's target of 80 participants but was sufficient for the planned analysis.

Lessons Learned

Recruitment in these small rural communities was challenging despite the variety of strategies used. Social media might present an additional recruitment opportunity; however, that approach would not have been amenable to the focused recruitment in this project, unless local centers had web-sites or Facebook® pages geared towards local residents. Increasingly older individuals are using computers and the Internet; thus, this is a strategy worth considering. Interviews about the program on local radio stations can be a useful approach in rural areas. Identifying a convenient place to hold the program is very important, as is scheduling an attractive time.

Retention of participants was a significantly greater challenge than recruitment. For example, in one site, 15 people attended the first session and all completed the Time 1 questionnaire, indicating their intent to participate in the study. At the second session 15 people

attended, but only about one half of them were the same people who attended the first session. Early in the research project, the team had decided that if individuals came early to the second session and completed the Time 1 questionnaire before any content was presented, they could be included in the study. The material presented in the first session was explanatory and was not material covered by the questionnaires. The team also decided that attendance at three of the four sessions and completion of the Time 1 and Time 2 questionnaires made individuals eligible to receive the Time 3 questionnaire. These were trade-offs from the original design, but were deemed acceptable to maintain participant numbers.

Respondent burden, that is how difficult or time-consuming it is to participate in the project, can be a factor in retention. This was a consideration in the selection of instruments used for data collection, particularly those included in the Time 3 questionnaires. The goal of the team was to make participation as easy as possible while maintaining scientific integrity.

Adding communities, the only strategy that was effective in increasing numbers, had time and budget implications. For example, the budget for the study was based on travel of approximately 4800 miles; in actuality, the team drove over 9,000 miles. Also, in order to obtain sufficient participants within the budget and time frame for the study, the team ended up recruiting from congregate sites in two communities within the rural states of Montana and Wyoming that exceeded the target size of 10,000 residents. With a fixed budget, there was no ability to offer incentives to the new sites, although, as noted above, that did not seem to impact the willingness of sites to participate. Adding sites lengthened the project beyond the initially projected two years resulting in the investigators “donating” time during the third year, and pushing dissemination activities into a fourth year. Shortening the length of the intervention itself, such as holding the

sessions weekly, or compressing the content into two sessions might help retain participants, although most of the factors that caused attrition were life factors, such as illness or death, not factors that could be scheduled. Compressing the intervention would reduce the time allowed for participants to practice and integrate the skills into their own lives, but would reduce the time for adverse events to happen. Providing appointment cards, such as are given out by dental or medical offices, indicating the date and time of each session might help those who simply forgot. Having the participant write the time and dates on the cards themselves might further embed the appointment time in their minds and on their calendars. Offering participants a choice of methods of contact can give them a measure of control over their personal information, and so encourage ongoing participation.

Having the third questionnaire sent to participants homes to be completed independently and returned, albeit in a stamped and addressed envelope, can be a factor in retention. It is easy to put the packet aside and forget about it. Follow-up contact to ensure a maximum rate of return is important.

Despite the multiple recruitment and retention efforts discussed in this paper, the team struggled to obtain an adequate sample size. A marginally sufficient number was recruited in most communities but was not retained to completion. Individuals could attend sessions without being part of the research aspect, and several did, although most individuals who attended the first session also completed the Time 1 questionnaire indicating a willingness to be in the study. All individuals who attended the final session completed the Time 2 questionnaire, and most completed the final, or Time 3, questionnaire.

Retention was affected by participants' health status, inclement weather, forgetfulness, and other factors. To obtain an adequate sample, additional sites were required that had logistical and financial consequences. Obtaining and maintaining an adequate rural sample will likely always be challenging due to the limited size of rural populations and the additional challenges of a higher prevalence of chronic health problems, reluctance to travel in poor weather, and other life events common to older adults. It is hoped that the strategies used and lessons learned by this team will be instructive to others planning research projects in rural communities.

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