

## CASE REPORTS

# RECRUITING OLDER AFRICAN AMERICAN WOMEN FOR A CANCER SCREENING MESSAGE TRIAL: THEORY, GIS MAPS, AND CHURCH ENTRÉE

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### Abstract

This paper adds rich operational detail to the literature on recruiting older African American women, an underserved and at-risk population, for community-based research. Recruitment was undertaken for a study of cancer screening message contexts; that parent study comprised focus groups and a randomized trial. Social marketing perspectives informed the development of relatively low-cost recruitment strategies. GIS maps steered leaflet distribution and face-to-face outreach to individuals and organizations. African American churches were asked to serve as recruitment intermediaries, and the multiple steps in this process were outlined. The opportunity to participate was announced also through ethnic newspapers and other mass media channels, and the study participation experience itself was enhanced to increase the likelihood that early participants would encourage other women to participate. Recruitment and retention goals were met. In all, 867 women were added to a participant database. Participant reports of initial source of information about the study were kept for the 442 women in the trial phase of the parent study. Retention for a questionnaire mailed 30 days after immediate post-testing was 89%. Most participants said they had heard about the study via word-of-mouth (WOM), but in line with Diffusion of Innovation Theory, yields of WOM and other recruitment techniques fluctuated over time, and the recruitment strategy was adjusted accordingly. The perspectives and experiences described in this paper may help ensure successful recruitment in future community-based trials with older African American women and thus enlarge the arsenal of best practices for reducing gender and racial health disparities.

**Key words:** Research Recruitment, African-American Women, GIS, Cancer screening messages

**Running Head:** Recruiting older African American women

### 1. Introduction

The National Institutes of Health 1993 Revitalization Act mandated that federally funded clinical research in the United States either include women and minorities or

justify their exclusion,<sup>1</sup> but recruiting minority study participants remains challenging. Questions continue to be raised about the generalizability of research findings to minority populations, and efforts

to address health disparities are still insufficiently evidence-based.<sup>2,3,4</sup>

A frequently cited barrier to minority recruitment has been mistrust of researchers stemming from historical research abuses, fear of exploitation, and incompatible values and cultural frameworks.<sup>5,6,7</sup> Recently, reports of logistical and communication barriers to minority research participation have been more common.<sup>8,9</sup> Some researchers have been able to use expensive tools such as computer kiosks and mobile vans to make participation more accessible,<sup>10,11</sup> while others have had to rely on contacting prospective participants repeatedly and being flexible about data collection procedures.<sup>12</sup> Individual investigators have been advised to take the time to develop strong relationships with community leaders before attempting recruitment and to employ community-based participatory research designs.<sup>5</sup> Academic institutions have been urged to take long-term recruitment support measures such as maintaining community advisory councils, establishing minority research centers to train new investigators, and joining clinical trial networks.<sup>13-15</sup> Both community engagement and investment in recruitment infrastructure have led to notable minority recruitment successes.<sup>16,17</sup>

Success in minority recruitment also has been associated with: (a) combining active strategies (e.g., lay health-worker outreach) with passive ones (e.g., media notices),<sup>5,18</sup> (b) tailoring recruitment materials culturally,<sup>19</sup> and (c) using low-literacy content and multi-media channels for recruitment appeals.<sup>14</sup> Mathematical models of strategy yields may eventually help investigators select a cost-effective mix of recruitment strategies and the study of digital information channels holds promise.<sup>20-22</sup>

To date, however, comparisons of mass recruitment technique yields have lacked rigor,<sup>23</sup> produced inconsistent results,<sup>24,25</sup> or

failed to map efficiency over time, despite the potential for technique "wear-out." Few case studies have used behavioral theory to explain how their anecdotal findings might generalize. In sum, there is still a paucity of guidance for recruiters setting yield goals, projecting budgets, and making plans for workloads and timelines.

One minority population of particular interest is older African American women; they are at disproportionate risk of a wide range of negative health outcomes and, in many cases, their risk could be lowered by behavioral change.<sup>26,27</sup> To recruit members of this population for behavioral intervention studies, face-to-face contact with ethnically matched recruiters from the community and word-of-mouth (WOM) participation endorsements from previous participants have often worked best.<sup>5,16,28,29</sup> It also has been useful to run newspaper ads and broadcast interviews in minority-owned or minority-targeted media outlets.<sup>5</sup> Finally, recruitment has been conducted in churches and in other community gathering places to bring attention and credibility to a research participation appeal.<sup>30,31</sup>

Unfortunately, scant attention has been paid to the process of developing relationships between researchers and African American churches, a time-intensive endeavor with many subtleties.<sup>32</sup> Beyond one account of requesting member rosters<sup>33</sup> and another of recruiting churches for a physical activity trial,<sup>34</sup> little has been written on how to work with churches.

The purpose of this paper is to provide additional detail about outreach to churches and other relatively inexpensive, short-term strategies that succeeded in recruiting hundreds of older African American women for a community-based behavioral study. The paper also shows how the Social Marketing approach shaped our recruitment approaches and the Diffusion of Innovations Theory explained the patterns of recruitment yield we observed.

### 1.1. Theoretical frameworks

Social Marketing is an approach that uses commercial marketing techniques to achieve a social good by changing the behavior of target audience members.<sup>35</sup> The process begins with gathering insight into the target audience, which leads to audience segmentation. The "competition" for the desired behavior also is explored. Then the "4 P's" are used to refine an "offering" until the *product* has benefits that outweigh its *price*, the behavior can be performed in a convenient *place*, and *promotion* of the benefits of the behavior moves through efficient, trusted channels. The uptake of this offering is tracked and the 4 P marketing mix is modified on the basis of audience feedback.

The Diffusion of Innovations Theory describes how a novel idea, product or behavior moves through a social system over time.<sup>36</sup> Certain innovation characteristics (e.g., clear relative advantage over current practice) make diffusion more likely. The population is segmented based on readiness to adopt the innovation, and there are fewer early adopters than later adopters. The innovation spreads slowly at first, but the pace of adoption quickens when a critical mass of adopters initiates or encourages it. Opinion leaders within a network can speed diffusion.

### 1.2. Parent study summary

Between January 2010 and August 2011, the parent project (NIH R01-CA129420) tested cancer screening messages presented in various entertaining audio contexts. The study protocol was reviewed and approved by the Virginia Commonwealth University Institutional Review Board. Focus groups were conducted in public libraries, and then small-group data collection sessions were held in African American churches in Richmond and Petersburg, Virginia.

A woman was eligible to participate in the study if she was African-American, 50 years old or older, and neither a cancer survivor nor a medical professional. An estimated 21,000 African American women aged 50 or more lived in the target area.<sup>37</sup> Applying the exclusion criteria reduced the population to roughly 10,000.<sup>38-42</sup> Women received \$50 for attending one 2-hour session. Participants in the randomized trial phase received an additional \$25 if they returned a mailed follow-up questionnaire. Bottled water, other light refreshments, magazines and "dollar store" reading glasses were offered to participants. Churches received a nominal fee for use of their space.

## **2. Recruitment Methods**

*Recruiters.* Two female, African American, part-time project staff members from the local area led recruitment. The younger recruiter had experience in street outreach. The older recruiter was a mammography advocate who was well connected with local health service groups and an active member of a large church.

*Other channels of information about the study.* Non-recruiter channels included WOM from previous participants and others, church announcements, newspaper ads, editorials, TV and radio interviews, and flyers posted in venues or distributed on the street and at events.

*Geography-based outreach.* Census data and Geographic Information System (GIS) software (Version 9.3, ESRI) guided geography-based recruitment. Census tract counts of African American women over 50 were downloaded from the 2000 US Census and church locations were applied to GIS maps (see Figure 1). Census data also were used to generate lists of addresses of venues (e.g., nail salons, convenience stores) that eligible women might frequent.



**Figure 1.** African-American women 50+ years by Census Tract, & African-American churches.

*Participation appeals.* Invitations to participate explained that previous participants had described the sessions as interesting and enjoyable, that this was a chance to make a difference in personal and community health, and that we were testing health messages -- not women.

*Earned media.* An interview with the principal investigator (PI) led to a free feature article that began on the front page of a weekly ethnic paper and continued on an inside page where a large paid project ad also appeared. The article, written by a female editor, described cancer and cancer screening disparities, quoted the PI on the unacceptability of deaths from preventable causes, reported that more than a hundred women had already participated in the study,

and described the study procedures as interesting and fun. Three other press interviews were conducted, two for local African American radio stations and one for a reporter from a local affiliate of a national television network.

*Print materials.* Several kinds of print materials were developed for the study:

[Flyers]. Culturally targeted flyers have increased recruitment yield.<sup>43</sup> Several flyer designs, color schemes and texts were copy-tested with members of our targeted audience. The “winning” version included: (a) a stock photo of an attractive, smiling African-American woman around age 50, (b) the statement: “We want to hear from you,” (c) a university logo, (d) bulleted “who, what, when and where” information,

and (e) local and toll-free project phone numbers. Minor flyer revisions (e.g., seasonal changes in colors) were made periodically to recapture attention and prevent the perception that posted material was out-of-date.

[Tailored church tools]. Materials developed for churches included: (a) pulpit talking points, (b) notices sized for insertion in church bulletins, and (c) a brochure for ministers containing national and Virginia cancer statistics, a summary of study procedures (e.g., multi-level ethical review), and a list of ways that churches could support the study.

[Paid newspaper ads]. Print ads ran in the local mainstream daily newspaper and in several local African American weeklies. To help “brand” the study, the ads contained the same photograph that appeared on the flyer.

*Outreach to churches.* Three-minute study announcements were made from pulpits by the PI or project staff during 17 Sunday services, each at least two hours long. In five other churches, services were attended by project staff but study announcements were made by the pastor or a church member. Additional churches printed study information in their bulletins and/or posted recruitment flyers on physical or electronic bulletin boards or listservs.

*Encouraging positive WOM.* A 4 P's analysis led to: (*product*) writing question-

naires at a low reading level, printing them in large type, and adding amenities suggested by participants to the data collection sessions, (*price*) setting participant stipends at the upper end of the local university range, (*place*) holding the sessions at churches with adequate parking and access to public transportation, and (*promotion*) reminding participants to tell their friends about the study.

### 3. Results

#### 3.1. Yields from recruitment strategies

An estimated 1,500 - 2,000 women were screened for eligibility. Of these, 867 women were deemed eligible and had their contact information entered into a database. Sixty-six per cent of them participated in one of the two phases of the study; 89% of participants were retained at 30-day follow-up. Trial participants were asked how they had heard about the study.

Many participants agreed to tell other women about the study and WOM was the most frequently mentioned study information channel (see Table 1). Newspaper ads were next, with a large spike in mentions after the front page editorial/ad. Ethnic weekly ads prompted more calls than ads in the mainstream daily newspaper, which cost more. Ads listing a date for a data collection session prompted more calls than ads without dates.

**Table 1.** % of participant yield by reported source of information about the study (N=442).\*

Reported Source	Associated project outputs	% of RCT participants
Word of mouth	Mixed, e.g., outreach workers, former study participant contact	35.3
Newspaper ads	Purchased; 19 in ethnic weekly papers and 5 in mainstream daily papers	22.2
Newspaper articles	Reporter-initiated; 3 (2 in ethnic papers)	
Church	110 clergy contacts (60 via mass mailing; 46 personal contact [e.g., flyer delivery, email, phone call], 4 other)  17 pulpit announcements	19.0
Flyers alone or with recruiter contact <sup>†</sup>	~5,000	11.5
Television interview <sup>‡</sup>	1	0.5
Other/Unreported	Unknown	11.5

\*Only the women randomized into the experimental portion of the study.

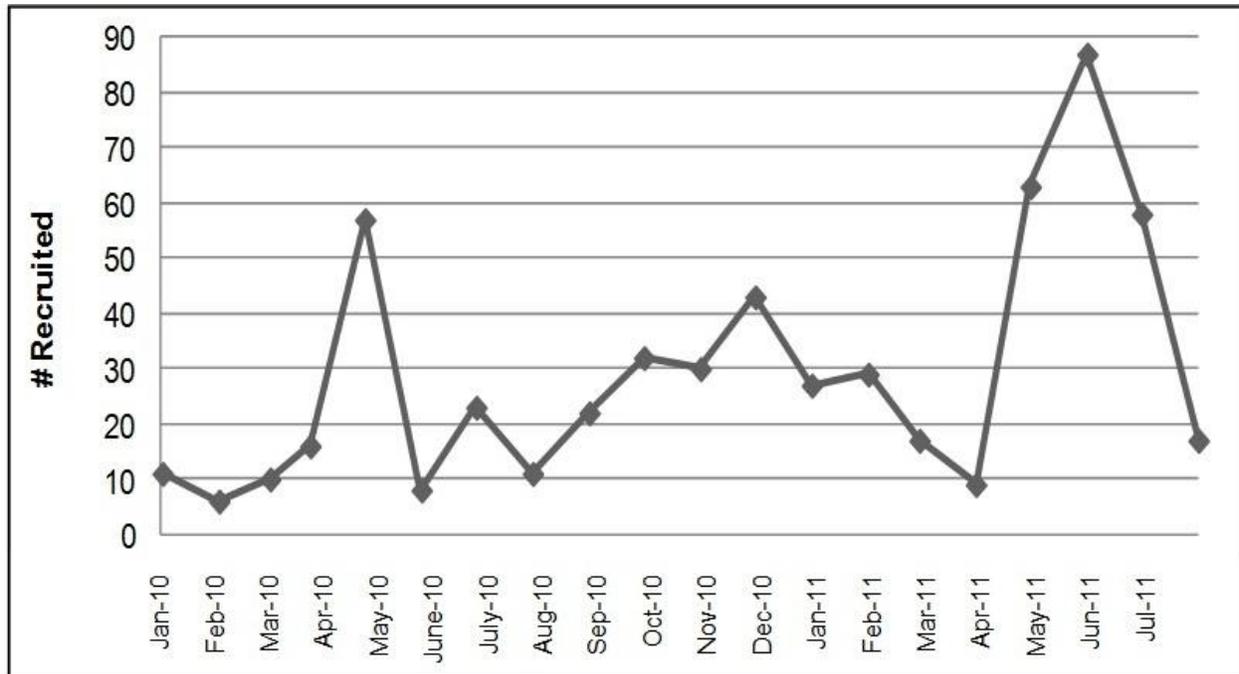
<sup>†</sup> Some flyers were distributed by organizations after project staff made presentations to them.

<sup>‡</sup> Took place during the last month of recruitment; the interview video was then posted online.

Church outreach required the greatest share of PI time. Other organizations addressed, information tables staffed, and flyers posted at venues yielded few participants. Similarly, although community events (e.g., health fairs) broadened or reinforced gatekeeper contact, they resulted in little recruitment, as previous researchers had found.<sup>43</sup> Many older female health fair attendees were already up-to-date for cancer screening or had survived cancer.

### 3.2. Recruitment trends over time

The pace and efficiency of recruitment increased over time, and there was a seasonal pattern in recruitment yield, as others have observed.<sup>44</sup> Calls from prospective participants were highest at the end of school and around the Thanksgiving/Christmas holidays (see Figure 2).



**Figure 2.** Recruitment progress by month over the project period.

Three other patterns in recruitment emerged (data not shown). First, newspaper ads were more effective towards the end of the project than they had been at its outset, prompting a major strategy adjustment; more ads were purchased per month and Church outreach was phased out. Second, WOM accounted for an increasing share of calls over time. Third, there were spikes in both recruiter effort and participant yield the week prior to each data collection session.

### 3.3. Lessons learned about churches

In the United States and in Virginia, the majority of African American churches were Baptist.<sup>45</sup> Some Baptist churches were affiliated with a state-level federation, and others were independent. The head of the federation endorsed the study after the director of its women's ministry wrote a strong letter supporting the project. His endorsement facilitated entrée to churches that were federation affiliates, but was not highly salient to organizationally and philosophically independent churches from the same denomination.

There was little if any response to an informational mass mailing to local African American churches. It was necessary to contact each church individually and interact for weeks before being allowed to recruit at a Sunday service. Some small churches had part-time pastors and/or support staff who were difficult to contact. Most large churches were internally hierarchical and required study vetting through health and/or women's ministries before we were permitted to propose recruiting church members to the pastor. In large churches, a supportive member willing to guide us through the system and make introductions was invaluable.

## **4. Discussion**

In 18 months, nearly 10% of the eligible older African American women in two adjacent cities opted into a database of potential study participants, and there was little attrition at 30-day follow-up. Using best communication campaign practice, "air cover" (e.g., mass media ads) was supplemented by GIS map-guided "ground

cover" (leaflets, face-to-face outreach).<sup>18</sup> A Social Marketing approach to participant recruitment was taken.<sup>46</sup> Ads were copy-tested with members of the target population, and materials were refreshed visually from time to time, while consistent brand elements were retained. Key norms and structures of the African American church intermediary audience were identified. We made the participation experience convenient and pleasant to foster positive WOM. Finally, recruitment technique yields were tracked with the expectation that their mix would require adjustment.

Several of our findings were consistent with Diffusion of Innovations Theory.<sup>36</sup> The overall pace of recruitment increased over time, as did the yield of WOM, which proved to be the most effective channel for information about the participation opportunity. Ethnic newspaper ads also increased in efficiency over time, and the role of church intermediaries diminished. Because of church support earlier in the project, a "tipping point" of community trust may have been reached, after which ethnic press ads may have served as prompts for women already intending to call for eligibility screening.

Like much of the literature, this study was undertaken to help meet ambitious recruitment goals for a parent project that had already begun, not designed to test a priori hypotheses. Other design limitations included a local sample and reliance on participant self-report. There was an unknown number of women exposed to recruitment appeals through via passive channels, and the specific sources of WOM information were unknown, so channel-specific yield ratios could not be calculated. These limitations notwithstanding, this study underscored and added nuance to previous advice to use multiple recruitment strategies and work through churches to recruit older

African American women for community-based research.

More research is needed to guide recruitment for community-based behavioral trials so that they can achieve sufficient statistical power to test worthy ideas about reducing racial health disparities. Of course, participants are always recruited for a parent study, but levels and periods of funding must accommodate distinct, systematic investigations of recruitment strategies if research in this area is to become more rigorous.<sup>3</sup> To inform their recruitment efforts, investigators should consider not only Social Marketing and Diffusion Theory,<sup>47</sup> but also newer conceptual models that focus solely on recruiting minority women.<sup>48</sup>

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