STRATEGIES FOR RECRUITING AFRICAN-AMERICAN RESIDENTS OF PUBLIC HOUSING DEVELOPMENTS INTO A RANDOMIZED CONTROLLED TRIAL

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Objectives: Two community-based strategies used to implement a clinical trial within public housing developments are discussed: 1) hiring and training community outreach residents (CORE) team members to recruit and retain primarily African-American participants; and 2) conducting health fairs to recruit participants into a trial examining the effects of nicotine gum and motivational interviewing on smoking cessation rates.

Design: A cluster randomized, community-based clinical trial.

Setting: This trial was conducted in housing developments within a metropolitan area in the Midwest.

Participants: Over a period of 20 months, the research team recruited 813 residents, 80% of whom were African-American, to attend health fairs. Of this number, 273 (33%) smokers were identified, and 173 were ultimately enrolled into the study.

Results: Attendance at health fairs of public housing development residents ranged from 8%–66% across the housing developments, with an average of 21%. A brief survey was conducted at the health fair to assess smoking status, fruit/vegetable consumption, and physical activity.

Conclusions: A number of possible explanations for the relatively high participation rates among a community-based trial include engaging the community in the research process, offering free health screening services, building recruitment incentives for the CORE, and tailoring health education/promotion materials according to the demographic make-up of the developments. Details regarding the development of recruitment strategies that may boost recruitment rates in community-based clinical trials with predominantly ethnic minorities are provided. (*Ethn Dis*. 2005;15:773–778)

Key Words: Recruitment, African American

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INTRODUCTION

A fundamental characteristic of community-based research is its emphasis on the participation and influence of non-researchers in the process of developing a collaborative, effective research project.[1,2] More specifically, community-based research focuses on the social, structural, and environmental inequalities by actively involving community members and researchers in many aspects of the research process. Community partners contribute their expertise to enhance understanding of a given phenomenon and integrate the knowledge gained to benefit the community.[3]

By conducting research within the confines of public housing developments, health promotion and disease prevention interventions are placed within easy reach of under-served populations. Public housing developments have been settings for: 1) community-based randomized controlled trials[4,5]; 2) smoking cessation clinical trials[6]; and 3) dietary clinical trials.[7] Basing the research in the public housing development community, rather than having the participants travel to a research site, may reduce the number of barriers to participation and attrition of participants in clinical trials.

Community-based health fairs are an efficient method of delivering health promotion, health education, and disease prevention programs.[8–10] Health fairs typically are voluntary, community-based events that can detect common health problems, identify risk factors, and provide educational information and supportive resources to promote healthy lifestyles.[9,10] Traditionally, health fairs have been conducted at schools,[8] large open halls adjacent to department stores and sports centers,[11] churches,[12–14] and social service centers adjacent to senior citizens' centers.[15] Often the goal has been to raise awareness about health and stimulate community members to adopt behaviors that will improve health and reduce health risks. Since health fairs successfully deliver health promotion and disease prevention information, investigators have begun to use them to recruit study participants.[13] However, the process of using health fairs to recruit minority participants into randomized clinical trials has not been widely reported in the literature.

In recent years, innovative community health-promotion programs have used community members in a frontline outreach capacity. These individuals understand, care about, and are able and willing to work with their commu-

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nity,[16,17] and others spontaneously seek them out for advice, support, and assistance.[18–21] Their role is referred to by many names, including lay health advisor and community health educator. Serving as liaisons between their community and the healthcare system, they are indigenous to the community in which they work—ethnically, linguistically, socioeconomically, and experientially. This emic or ''insider'' orientation provides the community health educators with a unique understanding of the culture and strengths of the community they serve[17,22] and the context in which health problems and possible solutions exist.[23] Often working with under-served populations, community health educators have a variety of capacities, from functioning informally as volunteers to having more formal roles as frontline healthcare professionals.[20]

PURPOSE

The purpose of this paper is to describe the main recruitment strategies integral to enrolling participants into the Pathways to Health (PATH) clinical trial: 1) hiring and training public housing residents; and 2) using health fairs. We provide details about the process of developing these strategies to assist other researchers interested in using them.

METHODS

Design of the Trial

The PATH trial was a National Institute of Health-funded, community-based, cluster-randomized clinical trial in 20 public housing developments in a metropolitan city in the Midwest. The PATH trial examined the effectiveness of motivational interviewing (MI) counseling and nicotine gum for smoking cessation. The attention control comparison group consisted of smokers provided with MI counseling and dietary education materials to increase fruit and vegetable consumption. The primary outcome variable in both arms of the trial was smoking cessation, and the secondary outcome was an increase in the consumption of fruits and vegetables. This dual intervention design was chosen to: 1) help ensure community buy-in of the study; 2) answer an important second study hypothesis; 3) collect data on other cancer prevention-related behaviors in under-served populations; and 4) help alleviate residents' possible distrust of being part of a ''drug'' study with a placebo.

Recruitment Strategies

Community Outreach Resident (CORE) team members

Community outreach resident (CORE) team members were public housing residents and managers hired to recruit residents to attend a PATH health fair and act as liaisons between the research team and the community. The CORE team members engaged in many activities to ensure the project's success including: 1) recruiting for the health fairs by going door-to-door, signing up residents to attend the health fair (especially cigarette smokers), handing out flyers, displaying study incentives and posters in prominent areas, making announcements about the study at meetings; and 2) providing feedback on the best practices needed when engaging and working with their respective communities. These strategies were augmented by the CORE team members' presence in and rapport with the community throughout the course of our study.

Selection and Compensation of CORE Team Members

To initially identify CORE team members, the project directors met with a group of leaders of the housing authority as well as members from the Public Housing Resident Council, a volunteer organization representing the rights and concerns of the residents. After these initial meetings, members of the research team met individually with representatives from the housing authority and resident council for each targeted housing development. Candidates were then identified and contacted for an on-site interview. One of the project directors or a senior research staff member interviewed the potential candidates for the CORE team member positions. During the interview, we ascertained the levels and types of activity that reasonably could have been expected from potential CORE team members and assessed whether they would be able to reliably contact participants, convey messages from PATH counselors, and provide support consistent with the PATH study's goals. To help focus and consolidate these qualifications and responsibilities, our research team developed a training manual, which outlined the goals and research design of the PATH study and provided information on the roles and responsibilities of CORE team members.

In addition, we provided financial compensation to all CORE team members for their time and effort invested in the PATH study. Financial compensation was based on the following schedule: 1) $50 and a certificate of completion for attending CORE training; 2) $20 for each cigarette smoker recruited who attended the health fair; and 3) up to an additional $300 if certain re-

tention percentages were met—ie, $100 if at least 90% of participants were retained one week after being enrolled into the PATH study; $100 if 75% of enrolled participants were retained at eight weeks; and $100 if 66% of enrolled participants were retained at the end of the six-month intervention. This compensation schedule was implemented after the third health fair (HD 3) in an effort to increase enrollment in the study.

Selection of Housing Developments

Criteria for the 20 developments selected included: 1) a residential population of at least 100 adults (≥18 years old); 2) a community room and/or parking lot of adequate size; 3) accessibility by all residents; 4) cost to rent the community room; 5) availability on a suitable date and time; and 6) adequate restrooms, kitchen facilities, heating/air conditioning, and electrical outlets.

Health Fair Components

One health fair was held at each of the 20 housing developments. Each health fair consisted of 10 stations, which included entertainment, health education/information, and data collection (detailed in Table 1). The entertainment component consisted of children's activities and a healthy lunch.

The second component of the PATH health fairs was health education. Information was presented in the form of printed materials, videotapes, and demonstrations (eg, food portion size models based on the Food Guide Pyramid). All information presented was designed to build on preexisting knowledge and meet real needs of the housing development residents as well as reflecting multicultural health beliefs.[10] The research team tailored the types of health information distributed at the health fair based on the demographic make-up of each targeted housing development. For instance, if a housing development had a higher percentage of Hispanic residents, then health information pamphlets translated into Spanish were included. In addition, culturally sensitive information related to diet as well as information on medical conditions known to occur at higher rates among African Americans (eg, hypertension) were distributed. At developments where elderly persons lived, health information related to conditions associated with advancing

Table 1. Health fair stations, functions of stations, and minutes allocated for stations

Health Fair Station	Study Data Collected	Health Information Collected	Entertainment	Min. at Each Station
#1 Entry/check-in	X			5
• Residential status is confirmed				
• Ticket for TV/VCR raffle				
• Health fair packet of information				
#2 Entry station questionnaire				10
• Health fair survey is administered	X			
#3 Carbon monoxide (CO) testing				8
• Exhaled breath CO level is measured	X	X		
#4 Height measurement and bioimpedance analysis				15
• Weight	X	X		
• % Body fat				
• Basal metabolism rate (BMR)				
• Body mass index (BMI)				
#5 American Red Cross	X	X		40
• Cholesterol testing				
• Glucose testing				
• Blood pressure screening				
#6 Health education and health fair collaborators series				15
• Cardiovascular videotapes				
• Health education/promotion materials		X	X	
• Food portion size demonstration		X		
#7 Health fair results/health screening				10
• Computer generated screening report	X	X		
• 2 movie tickets distributed				
#8 PATH Study enrollment				60
• Baseline survey administered	X			
• Study incentives are distributed (eg, water bottle and refrigerator magnet)				
#9 Lunch			X	30
#10 Entertainment Services for Children				N/A
• Clowns, Balloon Artists, Firemen/Policemen			X	

age (eg, osteoporosis) was distributed. At all of the health fairs, healthcare professionals (eg, physicians, psychologists, and dietitians) and trained health fair staff (eg, medical students, research assistants, and counselors) were available at specified locations to distribute information and answer questions.

The third component of the health fairs was giving participants free health screening tests (ie, blood glucose, cholesterol, and blood pressure), consultations, and referrals. Screening tests administered at PATH health fairs were primarily designed for individuals in good health, without symptoms of disease or in the early treatable stages of an illness.[10] Tests results were interpreted by on-site physicians and staff and discussed with each health fair participant, though medical diagnoses were not made. In addition, follow-up with the participant's healthcare provider was encouraged for all abnormal results and for diagnostic confirmation and therapeutic intervention. Health fair participants were provided with a compilation "results" sheet from the screening tests (carbon monoxide level, weight, percent body fat, body mass index, blood glucose and cholesterol, and blood pressure).

The research component included an initial 20-item survey instrument that was administered to all health fair participants to determine eligibility for the larger study (via assessment of smoking status, age, and cognitive status). This questionnaire also assessed a number of other health behaviors, including physical activity level, weight concerns, body image perception, and fruit and vegetable consumption. A final research component of the health fairs was the enrollment of participants into the PATH trial, which included identifying eligible smokers, seeking consent, and administering a baseline survey.

Incentives for Health Fair and Study Participants

As incentives for attending the health fair, residents of the respective public housing development who signed informed consent, completed the initial questionnaire, and went through the stations of the health fair received two movie tickets, a free on-site lunch, a raffle ticket for a TV/VCR combination, and various small giveaways from local collaborators, such as pencils, hats, and balloon animals. In addition to the above incentives, enrolled PATH study participants (ie, cigarette-smoking residents who met eligibility criteria, completed the baseline survey, and signed the study informed consent) were provided with a $40 shopping voucher and a water bottle and refrigerator magnet each imprinted with the PATH logo.

Table 2. Demographics of health fair participants

	Health Fair Participants (*N*=813)
Age in years, mean, (SD)	48.9 (18.6)
Gender, % female	69.6
Education, %	
<High school	40.1
≥High school	59.5
Non-insured, %	18.8
Type of healthcare coverage, %	
Employer	5.1
Medicare	15.4
Medicaid/medical assistance	52.0
Military	2.3
Other	3.5
Race/ethnicity, %	
African American/Black	75.6
Caucasian/White	15.9
Hispanic/Latino	2.3
Asian	0.4
Other	5.2
Servings of fruits per day, mean (SD)	1.09 (1.16)
Servings of vegetables per day, mean (SD)	1.16 (1.10)
Smoking status, %	
Former smoker	16
Never smoked	35
Smoke on some days	8
Smoke everyday	41

RESULTS

Health Fair Participants

A total of 813 residents attended 20 PATH health fairs (Table 2), which represents ≈21% of all possible attendees in this community. Most (80%) were African American. In terms of baseline fruit and vegetable consumption, participants reported consuming approximately two servings per day, markedly lower than the minimum of five servings per day recommended by many national organizations. Forty-nine percent of the sample reported smoking on at least some days. Of this percentage, 122 participants were not captured at the health fair. Thus, we identified 273 interested and potentially eligible smokers for enrollment into our study.

Of the identified smokers, 63% (173/273) were enrolled in our study. It was expected that ≈10–20 smokers per development would be enrolled in the study, resulting in an expected total number of 200–300 participants. We excluded a number of smokers (*n*= 100), resulting in a lower sample size than anticipated. Reasons for exclusion are outlined in Table 3. However, we maintained a high retention rate at the 6-month follow-up assessment (131/173, or 76%).

Table 3. Number of smokers excluded from enrollment in the PATH trial

Exclusion Criterion	No. Excluded
Smoked fewer than five cigarettes per day	26
Concurrently used other forms of tobacco (cigars, snuff, smokeless tobacco, etc)	26
Did not attend initial on-site counseling appointment (failure to be randomized)	27
Medical contraindications to nicotine gum	11
Did not plan to stay at housing development for at least six months	7
Use of nicotine replacement/smoking cessation therapy in past 30 days	5
Intention to become pregnant in the next six months	5
Lack of access to a working phone	4
Unwillingness to use birth control if in the nicotine gum arm (premenopausal females)	3
Did not reside at housing development	1
Total excluded:	100*

* Total number does not add up to 100 because participant could have multiple reasons for exclusion.

DISCUSSION

We found several useful and innovative strategies to successfully implement a randomized clinical trial in a community setting: 1) hiring and training CORE team members; and 2) conducting a health fair to recruit study participants.

The health fairs not only were a source of data collection for the clinical trial but also provided a service to the community by meeting the housing development residents' needs for health promotion, education, and prevention. By allowing residents to explore the health fair stations at their own pace, we provided health education information and supportive resources to promote healthy lifestyles. In addition, the health fairs became a social event where residents gathered and interacted with each other and with the research team and physicians from the medical center. This interaction gave us an opportunity to address any concerns and questions the residents may have had about this project, the medical center, its presence in the community, and future community-based research and interventions.

With the assistance of the CORE team members, we successfully implemented 20 health fairs in 20 separate housing developments. In addition, none of the housing developments we approached refused us entry or denied us the ability to conduct a health fair in their development. In fact, most housing development managers and resident councils (along with identified CORE team members) generally thought of this as an opportunity to provide their residents with free health information and screening tests from a local medical center. Having the CORE team members on our research team was a point of entry into the public housing development community and demonstrated trust and a preexisting relationship between the community and the medical center. We developed a unique method of enrolling participants into our clinical trial as well. Having the counselor and participant connected at the health fair not only helped with data collection, but also facilitated initial rapport building between counselor and participant.

While our initial strategy was to recruit a number of CORE team members proportionate to the housing development population, doing so was not feasible in many developments. Where possible, we attempted to enlist more CORE team members for larger developments, which allowed recruitment activities members (door-to-door recruitment, posting flyers, etc) to be equally distributed across each development's CORE team members. An increase in the number of CORE team members hired did not necessarily affect the percentage of residents who attended the health fairs. However, the research team and CORE believed it was helpful to have more CORE team members for the larger housing developments. In general, the research team felt that including monetary bonuses for the CORE for keeping enrolled participants in the study was effective.

Several possible lessons would help increase the attendance at future recruitment health fairs. Of the health fair participants, fewer individuals than expected were smokers (34% or 273/813) and eligible for the trial (63%, 173/273), due in part to the exclusion criteria of our study. However, everyone who was eligible agreed to enroll in the study, and only 20% (27/173) failed to attend their initial study session.

More than 20% of the residents, who some considered difficult to reach, attended our health fairs. By engaging the CORE team members in the research process, we identified barriers that would have hindered our recruitment efforts and developed innovative solutions to them. One strategy involved the CORE team members stressing the numerous entertainment services provided for children while adults enjoyed the health fair. Also, it was important to have well-trained, community-engaged, and community-active CORE team members from the housing developments. For example, housing development #12, which had the fewest adult residents (n=122), also had the largest number of health fair participants (n=82, 68% of the total adult population). The two CORE team members from this housing development were officers of the tenant council, were well known by the residents, and worked closely with the manager providing special services to the residents (eg, Saturday morning food pantry).

Our strategies to recruit participants into the PATH project were not without limitations. Using medical services volunteers at our health fairs meant

that a variable number of persons was available to provide services. To address this barrier, members of our research team (eg, research assistants, PATH counselors, and medical students) were trained to perform blood glucose and cholesterol testing along with blood pressure screenings. Another limitation was variable attendance at certain health fairs.

Several strategies could improve participation in future projects. For instance, fostering a sense of community in the residents through social events, cooking demonstrations, or health screenings in advance of the health fair might have increased the presence of the medical center in the community. Future research teams could compile exceptional efforts of individual CORE residents and replicate them at all community sites. Areas to address for future community clinical researchers to maximize recruitment include broadening inclusion criteria and choosing community research partners who have a history of working well with residents.

Future studies examining the issues and challenges presented in this paper could enhance minority participation in community-based clinical trials based on the PATH model. Since this was one of the first studies of its kind conducted among this population, we believe we have made progress by: 1) taking this intervention to the community; 2) enhancing understanding of many health issues affecting the community; and 3) encouraging many residents to attend, socialize, and interact with the research team.

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REFERENCES

1. Hatch J, Moss N, Saran A, Cantrell-Presley L, Mallory C. Community research: partnership in Black communities. *Am J Prev Med*. 1993;9(suppl):27–31.
2. McWilliam CL, Desai K, Greig B. Bridging town and gown: building research partnerships between community-based professional providers and academia. *J Prof Nurs*. 1997; 13(5):307–315.
3. Israel BA, Schultz AJ, Parker E, Becker AB. Review of community-based research: assessing partnership approaches to improve public health. *Annu Rev Public Health*. 1998;19: 173–202.
4. Fitzgibbon ML, Prewitt TE, Blackman L, et al. Quantitative assessment of recruitment efforts for prevention trials in two diverse Black populations. *Prev Med*. 1998;27:838–845.
5. Sung JFC, Blumenthal DS, Coates RJ, Williams JE, Alema-Mensah E, Liff JM. Effect of a cancer screening intervention conducted by lay health workers among inner-city women. *Am J Prev Med*. 1997; 13(1):51–57.
6. Fisher EB, Auslander WF, Munro JF, Arfken CL, Brownson RC, Owens NW. Neighbors for a Smoke Free North Side: evaluation of a community organization approach to promoting smoking cessation among African Americans. *Am J Public Health*. 1998;88: 1658–1663.
7. Resnicow K, Coleman-Wallace D, Jackson A, et al. Dietary change through African-American churches: baseline results and program description of the Eat for Life trial. *J Cancer Educ*. 2000;15:156–163.
8. Brown CM, Khan ZM. A survey of African Americans at a community health fair. *J Health Care Poor Underserved*. 1998;9(4):357–366.
9. Carter KF. The health fair as an effective health promotion strategy. *Am Assoc Occup Health Nurs J*. 1991;39(11):513–516.
10. Dillon DL, Sternas K. Designing a successful health fair to promote individual, family, and community health. *J Community Health Nurs*. 1997;14(1):1–14.
11. Begg E. Planning a health fair. *Community Outlook*. 1989:19–22.
12. Gardner J, Nickolaus MJ, Steckbeck R. Health fair and CPR training: a successful community outreach partnering and marketing opportunity. *J Cardiovasc Manage*. 1990;10:18–27.
13. Resnicow K, Coleman-Wallace D, Jackson A, et al. Dietary change through Black churches: baseline results and program description of the Eat for Life trial. *J Cancer Educ*. 2000;15: 156–163.
14. Wilson LC. Implementation and evaluation of church-based health fairs. *J Community Health Nurs*. 2000;17(1):39–48.
15. Edwards D. Elderly Black participants and their satisfaction with a health fair experience. *Virginia Nurse*. 1991;59(3):6–10.
16. Bracho A. A working model of community involvement: the urgency to go beyond rhetoric. *Minor Health Today*. 2000;1(4): 38–42.
17. Love MB, Gardner K, Legion V. Community health workers: who they are and what they do. *Health Educ Behav*. 1997;24(4):510–522.
18. Earp JL, Flax VL. What lay health advisors do. *Cancer Pract*. 1999;7(1):16–21.
19. Eng E, Smith J. Natural helping functions of lay health advisors in breast cancer education. *Breast Cancer Res Treat*. 1995;35:23–29.
20. Eng E, Young R. Lay health advisors as community change agents. *Fam Community Health*. 1992;15(1):24–40.
21. Satterfield D, Burd C, Valdez L, Hosey G, Shield JE. The ''In-Between People'': participation of community health representatives in diabetes prevention and care in American Indian and Alaska Native communities. *Health Promot Pract*. 2002;3(2):166–175.
22. Tashima N, Crain C, O'Reilly K, Elifson CS. The community identification (CID) process: a discovery model. *Qualitative Health Res*. 1996;6(1):23–48.
23. Hill MN, Bone LR, Butz AM. Enhancing the role of community-health workers in research. *J Nurs Scholarsh*. 1996;28(3): 221–226.

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